



CITY AND COUNTY OF NEWCASTLE UPON TYNE

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH


ON THE

Sanitary Condition of the City

DURING THE YEAR

1936.

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Members of Council who served on the

HEALTH COMMITTEE.

The Lord Mayor (Alderman JOHN GRANTHAM, J.P.)

Councillor WALTER THOMPSON, J.P., Chairman.

Alderman DAVID ADAMS, J.P., M.P., Vice-Chairman.

Alderman J. CHAPMAN.

„ J. MOORE, J.P.

„ W. LOCKE, J.P.

Councillor CATHERINE A. AULD, J.P. Councillor MAY NEWTON.

„ H. MOAT.

„ R. M. ROWE.

„ J. PEARSON, J.P.

„ T. M. TAYLOR, J.P.

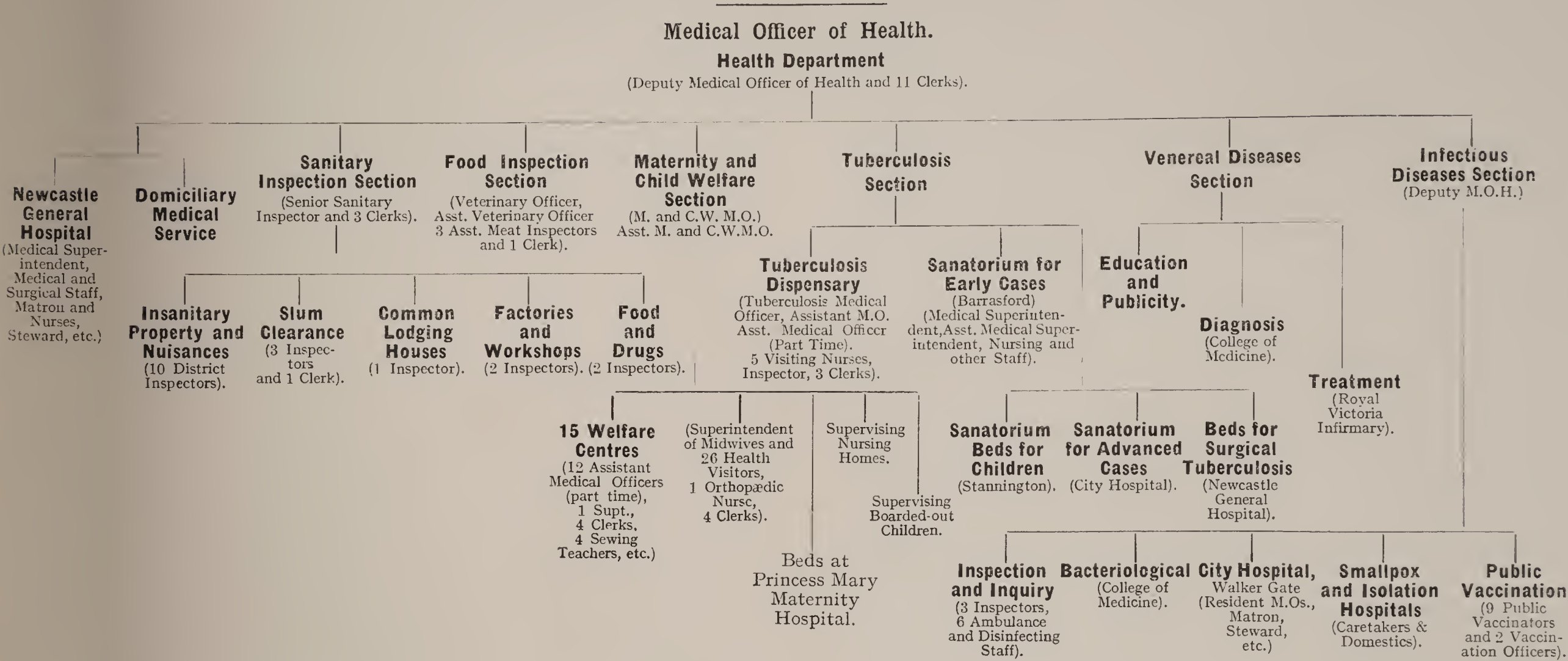
„ A. E. BEDSON.

„ CATH. A. LOCKE, J.P.

„ J. E. SCANLAN, O.B.E.,
J.P.

„ E. F. WEIDNER.

Table showing the various Sections of the Health Committee's work which is under the direct charge of the Medical Officer of Health.



MATERNITY AND CHILD WELFARE COMMITTEE.

*Alderman JOHN CHAPMAN, Chairman.

*Councillor CATHERINE A. AULD, J.P., Vice-Chairman.

*Alderman DAVID ADAMS, J.P., M.P.

*Councillor WALTER THOMPSON, J.P. †Dr. R. P. RANKEN LYLE, J.P.

* „ J. E. SCANLAN, O.B.E., J.P. †Dr. J. C. SPENCE.

* „ MAY NEWTON. †Mrs. E. I. LEACH.

* „ J. PEARSON, J.P. ‡Councillor JEANIE L. GIBBIN,
O.B.E., J.P.

* „ CATH. A. LOCKE, J.P. ‡ „ FRANCES E.
TAYLOR, J.P.

* Member of the Health Committee.

† Co-opted member.

‡ Appointed by City Council.

STAFF.

J. A. CHARLES, M.D., B.S., F.R.C.P., D.P.H., Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases.

E. F. DAWSON-WALKER, M.D., B.S., B.Hy., D.P.H., Deputy Medical Officer of Health.

WM. GRAY, Senior Sanitary Inspector.

JAS. McNICHOL, Chief Assistant Inspector and Assistant Workshops Inspector.

ISAAC CLARK, Assistant Workshops Inspector (retired July).

W. E. PERKINS, Assistant Workshops Inspector (Appointed July).

A. FLOCKHART and A. KIRSOP, Assistant Inspectors under the Food and Drugs Acts.

L. W. JOHNSON, J. BROWN, L. WADE, M. SWALES (resigned 31st Dec.), **H. W. GRIEVES** (resigned July), **R. G. SUDDICK** (resigned Feb.), **A. IBBITSON, W. M. PETTIGREW, R. S. COOPER, E. BANKS, T. SAYER, D. WILKINSON,** District Inspectors.

W. STEWART, F. GALTON, F. JAMES (April), **F. THOMPSON** (Temp. Aug.), Slum Clearance Inspectors.

N. MAYNE, Assistant Inspector of Common Lodging Houses.

WM. BEAN, R. CHAPMAN (Temp.), **J. SHIPLEY** (April), Infectious Diseases Inspectors.

JAS. ROBSON, JAS. BRUCE, JNO. R. CRAGIE, J. W. ROBSON, THOS. MOORE, J. ROBSON, Jun., Ambulance Drivers and Disinfectors.

***ALFRED HEDLEY, M.S.M., *GEO. CUTHBERTSON, *ALEC. M. WALKER, JOS. GILHESPY, H. G. OLIVER, *D. H. MACPHERSON, *R. DOBBIN, H. G. COATES, *F. PELLATT, *L. SMALLEY, A. CAMPBELL, L. WHITEMAN** (appointed June), **R. A. RIDLEY** (Temp.), Clerks in the Health Department. **ALICE FENWICK, E. STOBART** (Temp.), **A. E. BLAIR** (Temp.), (Typists),

Those marked * hold the Sanitary Inspector's Certificate of the Royal Sanitary Institute.

THOS. PARKER, F.R.C.V.S., Veterinary Officer and Inspector of Provisions, **H. THORNTON, M.R.C.V.S., B.V.Sc., D.V.H.,** Assistant Veterinary Inspector.

JAS. M. ANDERSON, W. COCKBURN, GEO. PHILLIPS, Assistant Inspectors of Provisions. ***NORMAN DICKSON,** Clerk.

A. F. G. SPINKS, M.D., Maternity and Child Welfare Medical Officer.

E. G. BREWIS, M.D., B.S., M.R.C.P., D.P.H., Assistant Maternity and Child Welfare Medical Officer (appointed Jan.).

a **GEORGINA B. CAMERON, M.B.E.*,** Chief Health Visitor and Supt. of Midwives.

f **CATHERINE M. THEXTON†, b** **MARION MOODY*, c** **LIZZIE ISA PRITCHARD, c** **LOUISE SHELL, d** **FLORENCE MARTHA HATFIELD*, d** **NORAH B. WILLSON*, b** **E. HISCO*, b** **E. JOHNSON*, b** **N. E. CARR*, b** **T. MASON*, b** **E. M. HASTIE*, b** **N. LEWIS*, b** **M. A. SIMPSON*, b** **N. THOMPSON*, g** **C. N. PHILLIPS, b** **D. A. ATKINSON, b** **M. BATTY, b** **A. CRAGGS, b** **P. E. PEARCE, b** **R. ROXBY, b** **M. SCORER, b** **E. G. SAYER, b** **L. YOEELL, b** **A. BRADLEY, b** **C. BARRON*** Health Visitors. **EDITH RODGERS, MARION S. BATT, BLANCHE DICKSON, A. DOUGAL,** Clerks.

(Qualifications of those marked **a** C.M.B., General and Fever Nursing and R.S.I. Certificates. **b** C.M.B., General Nursing and R.S.I. **c** C.M.B. and R.S.I. **d** C.M.B. and General Nursing. **f** C.M.B., Fever Nursing and R.S.I. **g** C.M.B.).

* State Registered Nurse. † State Registered Fever Nurse.

IRENE COOK, S.O.N.A., Orthopædic Nurse.

ANNIE G. BAINBRIDGE, Superintendent of Welfare Centres (retired March).

GLADYS PATTISON (resigned Sept.), IRENE GAWMAN, CATH. BARNES, MARY E. MUSE, EDITH TAYLOR (Temp. appointed Aug.), VIOLET SIMPSON (Temp. appointed Aug.), Clerks.

H. GLEN DAVISON, M.D.

L. MABEL R. CAMPBELL, M.B., Ch.B.

H. HARVEY EVERS, M.B., F.R.C.S., (re-
signed Oct.).

GERTRUDE H. G. HICKLING, M.D., Ch.B.,
B.Sc., D.P.H.

C. N. ARMSTRONG, M.B., B.S., M.R.C.P.,
B.Hy., D.P.H.

A. G. OGILVIE, M.B., B.S., M.R.C.P.

ANNE FAIRWEATHER, M.D., B.S.,
B.Hy., D.P.H., D.P.M. (Psych. and
Ment. Def.).

F. E. STABLER, M.D., B.S., F.R.C.S.

C. C. UNGLEY, M.D., M.B., B.S., F.R.C.P.,
M.R.C.S.

DOROTHY HOPKINSON, M.B., B.S.

NORA LONG, M.B., B.S.

ELSIE B. WRIGHT, M.D., B.S., M.R.C.S.,
L.R.C.P.

Assistant Medical Officers (part
time) Welfare Centres.

G. HURRELL, M.D., B.S., B.Hy., D.P.H., Tuberculosis Medical Officer.

N. V. HEPPLER, M.D., M.B., B.S., D.P.H. B.Hy., Assistant Tuberculosis Medical
Officer (resigned Aug.).

JOHN STOKOE, M.B., B.S., Assistant Tuberculosis Medical Officer (appointed
February).

WM. H. DICKINSON, O.B.E., M.D., Ch.B., M.R.C.P.(Ed.), D.P.H., Tuberculosis
Medical Officer (part time).

c CONSTANCE M. BAYNE, **d** ANNIE BOOTH, **a** W. E. DALE*, **b** J. P.
KENMIR*, **e** M. YOUNG, Tuberculosis Visiting Nurses.

{Qualifications of those marked **a** General Nursing. **b** General Nursing, C.M.B. and R.S.I. **c** General
Nursing and Health Visitors and School Nurses Certificates of R.S.I. **d** Fever Nursing.
e Fever Nursing and C.M.B.

* State Registered Nurse.

C. SANDILANDS, Assistant Inspector (appointed August).

GEO. MAGNAY, GERTRUDE GILLENDER, M. PRINGLE, Clerks.

BARRASFORD SANATORIUM.

G. G. R. GOODWIN, M.R.C.S., L.R.C.P., Medical Superintendent.

HAZEL I. ASHFORD, M.B., Ch.B., Assistant Medical Superintendent (resigned
February).

DORIS COHEN, M.B., B.S., Assistant Medical Superintendent (appointed Feb.)

FRANCES BAGULEY, A.R.R.C., Matron. Sisters, Nurses, Domestic Staff.

CITY HOSPITAL FOR INFECTIOUS DISEASES.

E. F. DAWSON-WALKER, M.D., B.S., B.Hy., D.P.H., Deputy Medical
Superintendent.

J. F. CAITHNESS, M.B., Ch.B., D.P.H., Senior Resident Medical Assistant.

L. H. MURRAY M.B., B.S., Resident Medical Assistant (appointed Aug.)

W. FRANK WILSON, M.B., B.S., Consulting Oto-Rhinologist.

J. L. WATT, Matron.

H. PHILLIPS, Steward.

JESSIE LAING, Assistant Matron. Sisters, Nurses, Clerks, Domestic Staff.

MAUD B. ELLIOTT, Dispenser.

GEO. COCKBURN, Engineer.

Lodge Keepers, Firemen, Porters, Gardeners, Joiner and Handyman.

SMALLPOX AND ISOLATION HOSPITALS.

MATTHEW and ISABELLA ROBSON, Caretakers.

NEWCASTLE GENERAL HOSPITAL.

G. P. HARLAN, M.D., Ch.B., B.Hy., D.P.H., Medical Superintendent.

G. F. DUGGAN, M.B., B.Ch., M.A.O., F.R.C.S. (Edin), Deputy Medical Superintendent.

JUNIOR RESIDENT HOUSE PHYSICIANS AND SURGEONS (6).

A. BARON, Matron.

S. LAKE and A. LUNT, (appointed May), Assistant Matrons. Sisters, Nurses, Domestic Staff.

N. H. HERDMAN, Dispenser (resigned Aug.)

G. H. DARLING, Dispenser (appointed Aug.)

JAMES MATTHEWS, Steward. Ambulance Drivers, Porters, Male Nurses, Clerks.

CONSULTING STAFF, Etc.

THOMAS BEATTIE, M.D., B.S., F.R.C.P., Medical Director.

F. J. NATTRASS, M.D., B.S., F.R.C.P., Physician.

ELSIE B. WRIGHT, M.D., B.S., M.R.C.S., L.R.C.P., Medical Registrar.

W. G. A. SWAN, M.B., B.S., M.R.C.P., Medical Registrar.

JOHN CLAY, C.B.E., M.B., B.S., F.R.C.S., Surgical Director.

J. C. STEWART, M.S., F.R.C.S., Surgeon.

W. E. WARDILL, M.B., B.S., F.R.C.S., Plastic and Genito Urinary Surgeon.

G. S. CLARK-MAXWELL, M.A., M.B., B.Sc., Surgical Registrar.

A. LOGAN, M.B., Ch.B., F.R.C.S. (Eng. and Ed.), Surgical Registrar.

G. A. MASON, M.B., B.S., F.R.C.S., Thoracic Surgeon (appointed April)

A. R. D. PATTISON, M.B., B.S., F.R.C.S., L.R.C.P., Neurological Surgeon.

S. W. DAVIDSON, M.D., B.S., M.R.C.P., Radiologist.

A. MACRAE, M.A., M.D., Ch.B., D.O.M.S., Ophthalmic Surgeon.

D. R. MACGREGOR, B.Sc., M.B., Ch.B., D.L.O. (R.C.P.S.), Oto-Rhinologist.

PHILIP AYRE, M.R.C.S., L.R.C.P., Anaesthetist.

W. J. PHILLIPS, M.B., B.S., Anaesthetist.

E. JOAN THOMPSON, M.B., B.S., D.A., Anaesthetist (appointed Feb.)

S. F. EVANS, Ph.D., M.Sc., Radiotherapist.

DISTRICT MEDICAL OFFICERS.

Dr. W. SIMPSON (resigned Feb.), Dr. R. W. NEVIN, Dr. T. J. RYAN.

PUBLIC VACCINATORS.

Drs. J. MACRAE (died November, A. SUTCLIFFE appointed Temp. November), RICHARD DAGGER, T. J. RYAN, H. R. SMITH (died March, L. S. DAVISON appointed Temp. March, Terminated July, W. A. SLATER appointed June), A. M. PATERSON, J. A. BRAND, G. P. HARLAN (Newcastle General Hospital). H. L. TAYLOR, S. FULLERTON, H. R. KENDAL.

VACCINATION OFFICERS.

EASTERN DISTRICT—W. H. F. GARRETT.

WESTERN DISTRICT—W. W. CUMMINGS.

**To Councillor WALTER THOMPSON, J.P., Chairman
of the Health Committee of the Corporation of
Newcastle upon Tyne.**

SIR,

I have the honour to present the sixty-fourth Annual Report of the Medical Officer of Health on the sanitary conditions of the City.

The practice which has been followed in previous years whereby the detailed reports of the work of the several sections of the Health Department are submitted by the officers responsible has not been varied, and these documents constitute the major portion of the text.

In this letter, which is not intended either to summarise or to consolidate the reports of the sub-departments—for these of themselves are important contributions to our health records—some comment will be made on the outstanding features of the year 1936, and the more urgent of our many continuing problems will be reviewed.

Vital Statistics—Marriage and Birth Rates.

The vital statistics of 1936 were in several ways remarkable and the more noteworthy details will now be referred to. Marriages were more numerous both actually and relatively than in any year since 1921. The total of 2,474 is only seven more than the record for 1935, but it exceeds the average for the three year period 1933—1935 by 124, and is equivalent to a marriage rate of 17.0 persons per 1,000 of the population.

The associations of prosperity and depression with the fluctuations in the marriage rate have been discussed in these pages on previous occasions. For the year 1936 it is notable that the matrimonial increase goes hand in hand with a more than welcome reduction of 6,387 persons in the number of the male and female unemployed. This return to employment was undoubtedly the most significant feature in the life of the City during the year.

The marriage rate has been increasing since 1931, but curiously enough the city birth rate does not yet reflect this fact. The birth rate for 1936 was 15.6 per 1,000, a figure considerably lower

than any hitherto recorded, though we may derive what little consolation we may from the knowledge that it is still higher than the rates for England and Wales as a whole, and for the 122 great towns which were 14.8 and 14.9 respectively.

Thirty years ago, in 1906, the Newcastle birth rate was 31.9, or rather more than twice the present rate. The effects of this change in the fertility of the population are met with in every phase of our social and economic life.

Maternal and Infantile Mortality.

Before dealing with the general death rate for the City something must be said of those special death rates which are concerned with the mortality of childbirth and of infancy. In neither case are the records comforting or complimentary. The local maternal mortality rate was equivalent to 5.92 deaths of mothers per 1,000 live and still births. This rate is the highest ever recorded in the City, and is disappointing in the extreme. It is 50 per cent. higher than the national rate, and even when we make every possible allowance for the greater completeness in statistical recording in recent years, for the evils of overcrowding and poverty which are still so prevalent, for the somewhat haphazard character of the midwives service, now happily to be co-ordinated, there still remains a doubt, not easily to be dismissed, that something is lacking either from the planning or in the execution of our midwifery services. Whether that deficiency is to be found in the hospital arrangements, or in the work of the medical and midwife personnel, or in the central direction of the scheme, is a matter which calls for careful enquiry and investigation.

The incidence of infantile mortality similarly gives us no cause for self-congratulation. Following upon a rate of 83 in 1934, and 86 in 1935, the infantile mortality rate in 1936 reached the high figure of 90 per 1,000 births. This should be contrasted with the national rate of 59, and the rate recorded for the 122 great towns which was 63.

Of the 408 deaths which occurred under the age of one year, 208 were attributable to the so-called neo-natal conditions of the first month of life, while the infective conditions of infancy, measles, whooping cough, bronchitis, broncho-pneumonia, diarrhœa and enteritis were responsible for 117 of the remaining 200. Actually the bad record of 1936 is due to a number of outbreaks, both

domiciliary and institutional, of infective enteritis. Such epidemics can be prevented if the simple rules of personal cleanliness are regarded by all those entrusted with the care and feeding of infants. In many cases observance of these elementary principles is rendered difficult by insanitary home conditions, or by the overcrowding and consequent relative understaffing which is so much a feature of our local hospitals.

The whole of the accommodation for the treatment of sick children which is provided in the various institutions of the City has long been overdue for reconstruction, and though their respective managing bodies are aware of this fact, the financial difficulties have not been appreciated or resolved by the general public.

In the Annual Report for 1935, reference was made to the investigation which had been carried out into the comparative frequency of deaths in the first month of life; *i.e.*, of the neo-natal mortality—amongst infants born of normal labours in hospital and under home surroundings respectively.

It was stated that the chances of survival of the home-born infant were greater at any rate in Newcastle, than those of the child born to a mother confined in hospital. Our enquiries along these lines have been continued and the evidence which has been collected in the local hospitals supports the general statement already made.

Even though the enquiry was limited to the subsequent history of children born of normal labours, it is appreciated that there may have been conditions in the mother necessitating her admission to hospital, which might in turn have been detrimental to the newly born child. It would be unwise, therefore, without wider knowledge of all the circumstances, to stress unduly the fact that a normal confinement in hospital may be prejudicial to the future welfare of the infant. But the evidence does suggest and suggest strongly, that overcrowded maternity wards and inferior maternity hospital accommodation, do play some part in the causation of neo-natal mortality, and that just as our children's hospitals are in need of reconstruction, so also are those institutions which for many years have given at all times refuge and succour to women in labour.

It is pleasing therefore to report that plans have been prepared for the erection of a new Princess Mary Maternity Hospital of 140 beds on the Castle Leazes site; and that the existing accommodation at the Newcastle General Hospital is to be replaced by a modern unit to comprise 30 beds in the first instance.

The General Death Rate.

The general death rate for the City showed a slight increase and rose from 12.6 per 1,000 population in 1935 to 13.1, the highest rate since 1931. This crude rate represents the occurrence of mortality in the Newcastle population, which of course is not constituted in the same proportions as regards the age and sex of its members as is the standard population of England and Wales. By means of comparability factors, which have been prepared by the Registrar General, it is now possible to adjust these differences in the population of individual towns and counties, and to place them all on a common basis of comparison.

In Table I. are recorded the crude and adjusted death rates for all cities in England with a population of 250,000 and over, together with similar information for certain local towns and counties.

TABLE I.

Name of Town.	Population as estimated by Registrar General, Mid. 1936.	General Death Rate.	Death Rate adjusted by Comparability Factor.
Portsmouth	251,400	11.8	11.7
Leicester	261,800	11.6	11.8
Bristol	413,900	12.3	12.0
Birmingham	1,018,800	11.3	12.4
London County.....	4,141,100	12.4	12.6
West Ham	265,800	11.6	13.3
Nottingham	279,400	13.2	13.6
Sheffield	518,200	12.2	13.8
Hull	321,500	12.7	14.0
Leeds	489,862	13.6	14.6
NEWCASTLE UPON TYNE.....	290,400	13.1	14.8
Liverpool	846,400	12.9	14.8
Bradford	291,085	14.9	14.9
Stoke-on-Trent	273,100	12.4	15.1
Manchester	744,000	13.5	15.4
Northumberland County	406,550	12.0	12.7
Tynemouth	66,800	11.6	12.8
Durham County	897,287	11.9	13.6
Sunderland	184,179	12.8	14.3
Middlesbrough	140,000	12.2	14.4
South Shields	111,800	13.2	14.8
Gateshead	119,034	13.2	14.9

As regards the actual order of merit it will be noted that our position is in the lower half of the national table, while amongst the local counties and county boroughs we are superior only to Gateshead.

Mortality from certain special causes.

Turning now to the individual causes of death the six most important of these are set out in order below (Table II.) The figures and positions for 1935 are reprinted for the purpose of comparison.

TABLE II.
INDIVIDUAL CAUSES OF DEATH.

No.	CAUSE OF DEATH.	1936.	
		Number.	Percentage of Total Deaths.
1	Diseases of the Heart	871	22.5
2	Cancer	413	10.6
3	Diseases of Veins and Arteries	412	10.6
4	Bronchitis and Pneumonia	366	9.5
5	Diseases of Nervous System.....	276	7.1
6	Tuberculosis—Pulmonary	265	6.8

No.	CAUSE OF DEATH.	1935.	
		Number.	Percentage of Total Deaths.
1	Diseases of the Heart	701	19.1
2	Cancer	433	11.8
3	Diseases of Veins and Arteries	406	11.1
4	Bronchitis and Pneumonia	358	9.7
5	Diseases of Nervous System.....	243	6.6
6	Tuberculosis—Pulmonary	240	6.5

It will be seen that the relative ranking of these major causes of death is the same as in 1935. Nevertheless, there are at least three points upon which some emphasis must be laid.

In the first place the steady increase in deaths from diseases of the cardio-vascular system (i.e., heart, veins and arteries) still continues. The lives of 1,283 persons ended as the result of some form of cardio-vascular disease or failure. In 1934 and 1935 the comparable totals were 935 and 1,107 respectively. In the past three years the proportion of these deaths to deaths from all causes has risen from 25.6% (1934) through 30.2% (1935), until in 1936 it was 33.1% or practically one-third of the total mortality.

Secondly, the number of deaths from cancer has fallen from 442 in 1934 and 433 in 1935 to 413 in 1936. But these figures of themselves signify nothing as there have been many years in which even smaller totals of cancer deaths have been recorded.

For the first time, however, a detailed enquiry has been made into the deaths from cancer occurring in Newcastle citizens, and an attempt has been made to obtain and to correlate information on the following, amongst other, points :—

- (a) whether the patient delayed unduly in seeking his doctor's advice,
- (b) whether the doctor diagnosed the patient's condition promptly and took steps thereafter to obtain appropriate treatment,
- (c) whether there was institutional delay in the provision of treatment,
- (d) whether every possible form of treatment was available, and
- (e) whether in certain patients the disease progressed to an unfavourable conclusion despite everything that could be done.

Generally speaking the answers to these questions obtained from an investigation of 202 cases were as follows :—

- (a) There was frequently reluctance on the part of the patient to consult the doctor until the disease was well established. No fewer than 11 per cent. of patients fell into this category.

- (b) In nine cases out of ten the diagnosis of the patient's condition was made promptly by the medical practitioner. In the remaining tenth case, owing to a more prolonged investigation, or the indefinite nature of the symptoms, diagnosis was somewhat delayed. Nevertheless, immediately diagnosis had been established, steps were invariably taken to obtain adequate treatment.
- (c) Admission to hospital, provided the patient acquiesced in this course, followed almost immediately, with at the most, only a few days' delay.
- (d) Adequate treatment, whether by surgery or by radium, was available for all City cases. Deep X-ray therapy was also available for the majority of patients requiring it, but here the need for further facilities could not be denied.
- (e) A large number of cases, amounting to one-third of the whole, proved to be completely resistant to every form of treatment, even when these were applied promptly and efficiently after early diagnosis.

To one result of this enquiry attention must be gratefully directed. The Schools and Charities Committee of the Corporation, having been informed of the trend of these investigations, offered to establish and maintain at the Newcastle General Hospital a fully equipped and staffed Deep X-ray Therapy Department. It is unnecessary to say that this offer, conceived in a spirit of the truest service to the community, was wholeheartedly welcomed and accepted by the Health Committee. The department will be completed in 1938, and both the Health Committee and the Schools and Charities Committee will be associated in its administration.

Thirdly, as regards pulmonary tuberculosis, the total number of tuberculous deaths of which 265 were recorded is 25 higher than the total of the previous year, and the percentage of the total death roll which is due to this disease is also slightly greater.

This is a reminder, if any were required, that in the City as on Tyneside generally the conquest of tuberculosis is not yet complete, and that unremitting attention and vigilance are necessary to keep it within such measure of control as we now possess.

TABLE III.

Average Death Rates per 100,000 in England and Wales and Newcastle upon Tyne during the Nine Year Period 1927-1935. (Based upon the Registrar-General's Abridged List of Causes of Death.)

No.	Causes of Death.	England and Wales.	Newcastle upon Tyne.	Newcastle as a percentage of England and Wales.
(1)	(2)	(3)	(4)	(5)
	All causes	1,211	1,288	106.3
	*Infantile Mortality	64.4	82.7	128.3
1.	Typhoid and paratyphoid fevers....	0.73	0.78	106.8
2.	Measles	8.2	17.6	214.6
3.	Scarlet Fever	1.7	3.0	176.5
4.	Whooping Cough	7.4	10.7	144.6
5.	Diphtheria	7.8	4.5	57.7
6.	Influenza	35.6	27.5	77.2
7.	Encephalitis lethargica.....	2.3	3.1	134.8
8.	Cerebro-spinal fever.....	2.0	5.2	260.0
9.	Tuberculosis of respiratory system	71.6	100.7	140.6
10.	Other tuberculous diseases	20.6	24.6	119.4
11.	Syphilis	3.4	6.8	200.0
12.	General paralysis of the insane, tabes dorsalis	4.8	6.6	141.7
13.	Cancer, malignant disease	148.5	142.2	95.8
14.	Diabetes	14.6	14.6	100.0
15.	Cerebral haemorrhage, etc.	66.1	54.1	81.8
16.	Heart disease	241.9	226.7	93.7
17.	Aneurysm	3.3	3.6	109.1
18.	Other circulatory diseases	60.2	92.6	153.8
19.	Bronchitis	58.1	58.1	100.0
20.	Pneumonia (all forms)	80.2	94.3	117.6
21.	Other respiratory diseases	12.9	13.4	103.9
22.	Peptic ulcer	10.3	11.1	107.7
23.	Diarrhoea, etc. (under 2 years)	10.2	18.7	183.3
24.	Appendicitis	7.3	6.0	82.2
25.	Cirrhosis of liver	3.9	2.9	74.4
26.	Other diseases of liver, etc.	6.4	7.6	118.7
27.	Other digestive diseases	†	†	†
28.	Acute and chronic nephritis	38.7	44.6	115.2
29.	† Puerperal sepsis.....	1.7	1.9	111.8
30.	† Other puerperal causes	2.5	2.7	108.0
31.	*Congenital debility, premature birth, etc.	32.4	34.9	107.7
32.	Senility	46.8	28.5	60.9
33.	Suicide	13.1	11.5	87.8
34.	Other violence	41.7	39.2	94.0
35.	Other defined causes	†	†	†
36.	Causes ill-defined or unknown	†	†	†

* The rates for these headings are per 1,000 live-births.

† Not extracted.

‡ The rates for these headings are per 1,000 live-births for 1927 and per 1,000 live and still births 1928 and onwards.

Death rates which are equivalent to 125 per cent. or more of the similar rates for England and Wales are indicated in heavier type.

Table III. is of particular interest, as it indicates at a glance the average death rates for England and Wales and for the City, from the 36 causes set out in the Registrar General's Abridged List. The period over which the rates have been averaged is now one of nine years, and the fifth column shows the significant differences between our own and the national record.

The following are the causes of deaths of which our experience is 25 per cent. greater than the average of the country as a whole—infantile mortality, measles, scarlet fever, whooping cough, the epidemic diseases of the central nervous system, tuberculosis of respiratory system, syphilis, general paralysis of the insane and tabes dorsalis, certain diseases of the circulatory system, and diarrhœa in children under two years.

Infectious Diseases.

The notifiable infectious diseases, other than tuberculosis, and those minor infectious conditions of which whooping cough and diarrhœa are the outstanding examples, were responsible for 308 deaths as compared with 303 in 1935. The distribution of the deaths amongst the individual diseases showed considerable variation, there being a marked reduction in the mortality from pneumonia and from whooping cough. These improvements, however, were more than offset by the deaths in the outbreaks of diarrhœa and enteritis to which reference has already been made. No fewer than 105 children under the age of 2 years died from these conditions. During the previous year there were 65 deaths in this age group from the same cause.

Of the other infectious diseases scarlet fever showed the most marked decline and the total of 937 notified cases was the smallest since 1930. The case mortality rate, based upon eight recorded deaths, was 0.80 per cent., which is only slightly higher than the average for the past 10 years.

As regards diphtheria, the epidemic manifestation of this disease, which was the subject of special comment in the last Annual Report, still continues. The number of cases increased from 675 to 693, which constitutes a record for the City. 35 deaths occurred and the case mortality rate of 5.1 per cent. is approximately the same as in the previous year. Other cities in the North of England, notably Leeds and Hull, have experienced similar epidemics in recent years, and we are probably fortunate

that both the incidence of the disease and the fatality have not been greater. Undoubtedly the immunisation clinics which have been in operation since 1934, have contributed in protecting large numbers of children from this serious infection.

Measles has again happily failed to appear in anything like a major epidemic. Although 4,022 cases were notified, the case mortality was very low, namely 0.42 per cent. But even this low mortality represented the loss of 17 young lives, or more than twice as many as died from scarlet fever. Nor must we forget the complications, the "running ears," and "delicate chests," which will be a continually recurring cause of invalidity in later years. The reduction in the mortality and morbidity rates of measles is almost entirely a question of the avoidance of overcrowding, and the improvement of the home environment. Even if our great housing schemes pay no other dividend than the relegation of measles and whooping cough to the position of truly minor infectious disorders, they will have proved worth while.

Nutrition.

In December, 1936, the report on the dietary survey of 1934 was published under the title of "A Study of the Diets of Sixty-nine Working Class Families in Newcastle upon Tyne," and a copy of this document is included as Appendix A. of the present report.

The reception given to the survey report by the medical and lay press alike was exceedingly favourable, and the many anonymous individuals, who had been concerned in its preparation, found therein a gratifying acknowledgment of their labours. More particularly is it necessary to stress the extent of our debt to the Medical Department of the Ministry of Health not only for information which was freely placed at our disposal, but also for much unofficial assistance.

One criticism of the report was to the effect that a knowledge of the economic and dietary conditions of the families investigated in 1934, was of little value in 1936. But such a criticism neglects altogether the importance of having the results of a carefully organised survey for use as a starting point and datum line for future enquiries.

In point of fact, a re-survey of the financial circumstances, though not of the diets of 64 of the 69 families has been made during the course of the present year, and has yielded most interesting results. Many of the features which were the subject of comment in the 1934 investigation are still in existence to-day. In other directions changes have undoubtedly occurred.

For example, no fewer than 16 of 35 traced unemployed families are now in the employed group, with larger incomes and greater spending powers. But the conditions of 24 families who had been employed in 1934 deserve some special attention. Three of them were found to be unemployed, and the remaining 21 though still employed were not, on the whole, as well off economically as they had been in 1934. Such minor increments as had been added to the incomes of these latter families were more than counterbalanced by (a) higher rentals and (b) the increased size of the family.

When these two factors have been taken into account, the average family in this group (i.e. those who were employed both in 1934 and 1937) has less money available now than it had in 1934, for the other outgoings of the family budget. The family manager has then to decide whether she will spend less on food or whether she will maintain the dietary expenditure at the expense of other sections of the budget. When it is realised that the present cost of foodstuffs in Newcastle is 16 per cent. higher than in 1934, it would appear probable that either less food is being consumed by the families under discussion, or that the same quantities of nutrients are being obtained from cheaper sources. What precisely happens could only be determined by another dietary survey. At any rate, it is obvious that we are only at the beginning of our understanding of this linked problem of family incomes and family dietaries.

Domiciliary Medical and Nursing Services.

A special report describing the working of the "open choice" method of providing domiciliary medical services which has been adopted in eight of the ten medical relief districts of the City was published in October, 1936, and is included in the present Annual Report as Appendix B.

There is nothing to add to the information therein set out, and to one point only is further reference indicated. Since the period covered by the special report, namely, from March 1st, 1935, to February 29th, 1936, full co-operation with the nursing associations has been achieved, and the value of the work of these organizations on behalf of the sick poor of the City can be gratefully acknowledged.

General Hospital Services.

The steady progress and continuous development of the work of the Newcastle General Hospital is seen in the columns of Table IV., in which are recorded the main statistical data since the transfer of the hospital to the City Council.

TABLE IV.

Year.	Admissions.	Discharges.	Operations.	Maternity Cases.
1930	3,048	3,099	596	97
1931	3,598	3,574	1,125	99
1932	4,522	4,447	1,428	161
1933	4,776	4,763	1,560	194
1934	5,544	5,555	2,076	225
1935	6,245	6,215	2,722	273
1936	6,707	6,695	2,722	388

More detailed information is given in the pages of the hospital report itself, which now incorporates special sections relating to the activities of the important departments which have been established for neuro-surgery, fever therapy, diabetes and thoracic surgery. These latter departments are an outstanding tribute to the energy and industry of the consulting staff of the hospital, and to the foresight of the Health Committee which has encouraged and fostered these newer enterprises.

*The Re-organisation of the Municipal and Voluntary
Hospitals in the City.*

Towards the end of the year, schemes for the complete re-organization of the City Hospital for Infectious Diseases and the Newcastle General Hospital, were submitted to the Commissioner for the Special Areas, with a request that they should be considered as being eligible for grant.

The schemes submitted in respect of the City Hospital for Infectious Diseases provided for the re-development of the Walker Gate site utilising the areas east and west of Benfield Road.

As regards the Newcastle General Hospital, the proposals put forward were based on the assumption that the Elswick Grange Institution would be removed to Benton, and that the site vacated would be available for hospital purposes.

A comprehensive scheme, extending the hospital to 944 beds, with admission block, out-patient department, tuberculosis dispensary and maternity and child welfare centre, has been prepared by the City Architect, Mr. R. G. Roberts, F.R.I.B.A., and irrespective of the receipt of a grant from the Commissioner's funds, should form the ground plan for the future development of the hospital.

Applications of a similar character have been laid before the Commissioner by the governing bodies of a number of the voluntary hospitals in the City. These proposals, when considered alongside the schemes for the re-development of the City Hospital for Infectious Diseases and the Newcastle General Hospital, constitute a notable contribution to the problem of the re-organization and rationalisation of the hospital services of the City and of the adjacent areas. So far, although certain of these schemes were presented to the Commissioner upwards of two years ago, there has been no indication as to whether he will regard them as ranking for grant and if so, what proportion of the total cost will be defrayed from the funds at his disposal. It is to be hoped that the difficulties which the Commissioner is apparently experiencing in formulating his policy on these matters, will be presently resolved.

Whitton Tower Convalescent Home for Children.

One other item of re-organization may be referred to here. As a result of the generosity of Councillor Angus Watson, J.P., the City now possesses in Whitton Tower, Rothbury, one of the most beautifully situated and splendidly equipped convalescent homes for children. Suitable patients are transferred there from both municipal hospitals, and its facilities are also available for City children from the voluntary hospitals.

Through its possession we have been enabled to fill one more of the gaps in our defences, and the success of Councillor Watson's inspiration is visible in the rapid restoration to health of children with long histories of ill-health in their ordinary surroundings.

(A photograph of the Home is inserted opposite page 147).

Slum Clearance and Overcrowding.

During the year two public enquiries under the Housing Act of 1930 were held and 11 Clearance Orders and three Compulsory Purchase Orders were submitted for confirmation to the Minister of Health.

These orders comprised a total of 545 houses in which were accommodated 1,141 families, with a total population of 3,930 persons.

The actual amount of slum clearance accomplished during the years 1935 and 1936 has been on the whole rather less than that effected in the years immediately succeeding the introduction of the 1930 Act, but the slowing down of the set programme is only temporary. As soon as certain difficulties which have been experienced by the Housing Committee have been removed, progress should be continuous in every direction.

The following is a summary of the work which has been carried out in the campaign between 1931 and 1936.

Ninety Clearance Orders and six Compulsory Purchase Orders have been made, and have necessitated the holding of eleven public enquiries.

These Orders as confirmed by the Minister have dealt with 2,332 premises in which were housed 5,315 separate families, with a total population of 19,477. The activities of the Health Committee so far, as represented by the ninety-six Orders referred to, and by action taken against individual unfit houses will result eventually in the re-housing of no fewer than 19,436 persons or 6.7 per cent. of the total population of the City. This total will have been exceeded to a very considerable extent before the full programme has been completed.

During the first six weeks of the year the Census of Overcrowding in accordance with the requirements of the Housing Act of 1935, was taken by a band of specially appointed enumerators and clerks. The results of the Census are of historical interest, and are summarised in the report of the Chief Sanitary Inspector. The percentage of the population who were ascertained to be living in conditions of overcrowding as defined on the admittedly low standards of the Act, was no less than 10.7 per cent.

Newcastle is therefore amongst the most densely overcrowded areas in the country. Amongst the greater cities, namely, those with a population of one-quarter of a million and upwards, only West Ham and Liverpool with overcrowding percentages of 8.4 and 7.4 respectively, have records which are in any way comparable to our own.

Conclusion.

There remains, Sir, the very pleasant privilege of thanking yourself, for the first time in your capacity as Chairman, your predecessor, who is now the occupant of the Vice-Chair, and the members of the Committee for the unfailing kindness and helpfulness which have been shown to me during a year when encouragement was exceedingly welcome.

The staff of the Department, and Dr. E. F. Dawson-Walker and Mr. A. Hedley in particular, have placed me more than ever in their debt for their willingness at all times, and for their co-operation and enthusiasm which together have lightened so many labours.

I am, Sir,

Your obedient servant,

J. A. CHARLES,

Medical Officer of Health.

Health Department,

Town Hall,

Newcastle upon Tyne,

July, 1937.

SUMMARY OF STATISTICS, 1936.

Population (estimated mid. 1936)	290,400
Area of City (acres)	11,401
Estimated number of houses	77,758
Rateable value	£2,543,478
Sum produced by 1d. rate	£9,919
Births	4,537
Birth rate (per 1,000 population)	15.6
Marriages	2,474
Deaths	3,878
Death rate (per 1,000 population)	13.1
„ „ „ adjusted by comparability factor	14.77
Infantile Mortality (deaths under one year per 1,000 live births)	90
Natural increase in population (excess of births over deaths in the year)	659

CHIEF CAUSES OF DEATH.

Cause.	Number.	Percentage of total deaths.
Diseases of the Heart	871	22.5
Cancer	413	10.6
Diseases of the veins and arteries	412	10.6
Bronchitis and pneumonia	366	9.5
Tuberculosis (all forms)	308	7.9
Do. (Pulmonary)	265	6.8
Diseases of the nervous system	276	7.1
Diseases of the genito urinary system	164	4.2
Diseases of early infancy, and congenital malformations under 1 year	191	4.9

INFECTIOUS DISEASES.

Disease.	Cases notified.	Number of deaths.	Death rate per 1,000 population
Scarlet fever	937	8	0.028
Diphtheria	693	35	0.117
Enteric fever	8	2	0.007
Erysipelas	176	12	0.041
Cerebro-spinal fever	8	7	0.024
Measles	4,022	17	0.059
Tuberculosis (all forms)	584	308	1.040
(new cases)			

Whooping cough, which is not notifiable, caused 7 deaths.

Influenza, which is not notifiable, caused 38 deaths.

CITY AND COUNTY OF NEWCASTLE UPON TYNE.

Health Report, 1936.

I.—GENERAL.

MORTALITY TABLES,
SOCIAL CONDITIONS, CLIMATOLOGY,
WATER SUPPLY, DISPOSAL OF REFUSE.

Population, Birth Rate, and Special Mortality Rates during the period of the Notification of Infectious Diseases.

* All rates calculated on population of 291,025

Separate years 1883 to 1894 are contained in reports previous to 1932
Prior to 1911 figures uncorrected for cases belonging to other Districts
x Calculated on population of 282,200. §§ Civilians only.

† Calculated on live and still births from 1933.

§ 1 an inward transfer.

** Under the heading of Measles, Rubella is included from 1916 onward.

GENERAL STATISTICS.

POPULATION.—As estimated by the Registrar General at the middle of the year 1936—290,400.

WARD.	Population (estimated).	Area prior to Boundary Extension (River area (1-4-1935) not included).	Added Areas. (1-4-1935)	River Areas.	Present Area (in- clusive of Added Areas and River Areas).	Area of Public Open Spaces (ex- clusive of River Area).	Net Area (exclusive of Public Open Spaces and River Areas).	Population per acre (exclusive of River Areas).	
								Gross (Col. 3 & 4).	Net (Col. 8).
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
St. Nicholas'	1,825	127	....	16	143	1	126	14	14
St. Thomas'	15,259	1,644	1,550	....	3,194	1,102	2,092	5	7
St. John's	11,884	169	....	12	181	2	167	70	71
Stephenson	17,721	212	....	37	249	....	212	84	84
Armstrong	14,383	176	....	37	213	31	145	82	99
Elswick	13,219	250	....	....	250	18	232	53	57
Westgate	13,570	90	....	....	90	1	89	151	153
Arthur's Hill	9,317	142	....	....	142	6	136	66	69
Benwell	22,339	551	6	51	608	37	520	40	43
Fenham	25,701	1,190	318	....	1,508	80	1,428	17	18
All Saints'	13,832	178	....	15	193	2	176	78	79
St. Andrew's	10,554	174	....	....	174	2	172	61	61
Jesmond	11,107	443	....	....	443	49	394	25	29
Dene	18,655	821	764	....	1,585	120	1,465	12	13
Heaton	13,266	225	....	....	225	28	197	59	67
Byker	14,433	139	....	....	139	....	139	104	104
St. Lawrence	17,742	180	....	17	197	7	173	99	103
St. Anthony's	15,571	598	....	51	649	21	577	26	27
Walker	30,022	1,149	....	69	1,218	43	1,106	26	27
CITY	290,400	8,458	2,638	305	11,401	1,550	9,546	26	30

INHABITED HOUSES.—77,758 inhabited houses, which, on the estimated population, shows an average of 3.73 persons per dwelling.

RATEABLE VALUE.—£2,543,478. A penny rate produced £9,919.

SOCIAL CONDITIONS.—The principal **Trades and Occupations** are of a healthy nature, being generally engineering and machine making; conveyance of men, goods, and messages; building and works of construction, *e.g.*, ship building; and connected with ships and boats, sea-faring and harbour work; food, tobacco, drink, and lodging; coal and shale mines; and commercial or business occupations.

The amount of **Public Assistance** granted during the year ended 31st March, 1936, was £389,891 for out-door relief, and £40,070 for indoor maintenance, making a total of £429,961, as compared with £423,607 in the previous year.

The number of registered male unemployed was 22,935 at the beginning of the year, and 17,193 at its close, whilst the figures for females were 2,804 and 2,159 respectively.

The City contains many **Hospitals** and other medical charities, but since wide surrounding districts are also served by them, figures as to patients treated are not of local value. A list of municipal and voluntary hospitals serving the city is given on page 41.

MARRIAGES.—2,474 marriages took place during the year, as compared with 2,467 in 1935, and 2,312 in 1934.

BIRTHS.—4,537, equivalent to a rate of 15.6 per 1,000 population.

DEATHS.—(All causes)—5,148, (53 weeks) equivalent to a gross rate of 17.3 per 1,000 population, and, after deduction of the deaths of 1,421 non-citizens and addition of 151 Newcastle residents who died elsewhere, to a net rate of 13.1 per 1,000 population. In 1935 the death rate was 12.6.

12 *Orders for Burial* (Newcastle upon Tyne Improvement Act, 1882, Sec. 47) were made, 3 being in respect of bodies lying in inhabited rooms, and 9 being cases from hospital.

Cremation Act, 1902.—The Crematorium, West Road, was opened on the 22nd October, 1934. The following table shows the number of cremations up to the 31st December, 1936 :—

	Newcastle Residents.	From Outside of the City.	Total.
*1934	11	15	26
1935	84	104	188
1936	109	161	270
TOTAL	204	280	484

* 22nd Oct.—31st Dec., 1934.

TOTAL DEATHS DURING RECENT YEARS FROM CERTAIN CLASSES OF DISEASE.
Classification in Table III. of Ministry of Health.

	Nervous System.	Circulatory.	Respiratory.	Digestive.	External Causes.
1912	410	435	603	204	152
1913	457	453	722	332	114
1914	448	505	863	465	142
1915	470	635	873	361	163
1916	477	448	856	281	117
1917	497	478	864	268	135
1918	498	503	957	252	135
1919	439	497	1,040	272	133
1920	384	534	861	275	124
1921	347	581	726	297	113
1922	363	689	913	181	92
1923	363	623	623	219	112
1924	376	667	749	206	110
1925	359	696	681	248	131
1926	335	742	596	220	158
1927	328	751	615	204	123
1928	331	796	480	247	153
1929	311	893	577	226	148
1930	256	874	469	227	137
1931	250	991	509	195	158
1932	232	976	413	201	161
1933	237	1,003	362	213	151
1934	266	935	405	215	134
1935	243	1,107	391	223	130
1936	276	1,283	408	266	154

CANCER DEATHS IN AGES (MALE AND FEMALE), 1936.

Site.	Sex.	Under 1 Year.	1—2 Years.	2—5 Years.	5—15 Years.	15—25 Years.	25—45 Years.	45—65 Years.	65 Years and over.	Total.
Cancer of the buccal cavity and pharynx	M.	....	....	....	....	....	....	15	11	26
	F.	....	....	....	....	....	....	2	2	4
Cancer of the diges- tive system	M.	....	....	....	....	....	12	51	64	127
	F.	....	....	....	....	....	7	46	55	108
Cancer of the respi- ratory organs	M.	....	....	....	....	....	4	10	5	19
	F.	....	....	....	....	....	....	5	3	8
Cancer of the uterus	F.	....	....	....	....	....	4	14	9	27
Cancer of other fe- male genital organs	F.	....	....	....	....	....	2	3	4	9
Cancer of the breast	M.	....	....	....	....	....	....	....	....	....
	F.	....	....	....	....	....	6	20	10	36
Cancer of the male genito-urinary organs	M.	....	....	....	....	....	3	4	8	15
Cancer of the skin	M.	....	....	....	....	....	....	1	3	4
	F.	....	....	....	....	....	....	1	1	2
Cancer of other or unspecified organs	M.	....	....	....	....	....	....	7	5	12
	F.	....	....	....	....	....	....	8	8	16
	M.	....	....	....	....	....	19	88	96	203
	F.	....	....	....	....	....	19	99	92	210
TOTAL		....	....	....	....	....	38	187	188	413

The average age at death for males was 62 and females 62.

INFANTILE MORTALITY.—408 infants died before completing the first year of life, representing a rate of 90 deaths per 1,000 live births.

ZYMOTIC DEATH RATE.—There were 195 deaths from the “Chief Zymotic Diseases”—smallpox, measles, scarlet fever, diphtheria, whooping cough, fever (typhus, simple continued, and enteric) and diarrhoea (all ages)—equivalent to 0.66 deaths per 1,000 population.

TUBERCULOSIS.—308 persons died from various forms of tuberculosis, 265 being from pulmonary, and 43 from non-pulmonary. The equivalent death rates are: *all forms* 1.04 *pulmonary* 0.90, and *non-pulmonary* 0.14, per 1,000 population.

For comparison of death rates with previous years see large table, page 31A.

For particulars of deaths as to site of disease, age, etc., see table page 37A.

GEOLOGY.—The geological formation of the area consists of heavy clay on the top of hard sandstone, which overlies coal seams.

CLIMATOLOGY.—The following is a brief summary of the main features of the weather in 1936, as recorded on the “Newcastle Chronicle’s” instruments :—

The mean barometer reading was 29.7 inches. The mean maximum and minimum temperatures were 74.5 F. and 39.8 F. respectively.

The rainfall for the year was 24.80 inches, 0.80 inches less than that of 1935 (25.60).

The following table shows the frequency of the directions of the wind :—

W.	on	40	days.
N.W.	on	117	„
N.E.	on	54	„
E.	on	8	„
S.E.	on	62	„
S.W.	on	75	„
S.	on	8	„
N.	on	2	„

Sunshine.

Sunshine records have been available by the courtesy of Professors G. W. Todd and J. A. Hanley, of Armstrong College. The observations are taken at Cockle Park Farm (fifteen miles north of the City, and in a rural area), and at the College itself. During the year 1,155 hours of sunshine were registered in the City, as compared with 1,428 at Cockle Park.

WATER SUPPLY.—The City is served by the Newcastle and Gateshead Water Company with a plentiful supply of pure upland surface water, collected from large catchment areas at Catcleugh, close to the Cheviots, and in lower Northumberland. It is stored in large impounding reservoirs at Catcleugh, Hallington, and Whittle Dene, and passes through filters at Whittle Dene and Throckley. It was found, however, that filtration did not secure the degree of freedom from bacteria which was desirable, and during the last few years it has been supplemented by chlorination, with marked improvement.

In the vast majority of cases the household taps are served directly from the mains without intervening cisterns. A separate trade supply is piped to some of the great riverside works from a point above the filters.

The bacteriological reports upon the water are given on page 105.

SEWERAGE.—There are 373 miles of sewers in the City (before extension) and 16 miles (approximate) in added areas discharging directly into the Tyne, which is tidal, at various points along the $8\frac{1}{4}$ miles of river frontage.

CLEANSING AND SCAVENGING.—A weekly collection of refuse is made from 75 per cent. of premises and twice weekly from the remainder.

There are 80,787 dry ashtubs and galvanised iron bins, 127 dry ashpits, and 128 conservancy system closets in the City. Conversions are proceeding steadily and, during 1936, 21 pail-closets, 13 combined privies and ashpits and four “cell” privies were removed and water closets substituted. Seven dry ashpits were also removed and dustbins substituted. One school (in the area added in 1935) is served by “chemical” closets, there being no sewers available. With this exception, all the schools are served by the water-carriage system.

ADOPTIVE AND LOCAL ACTS IN FORCE.

Adopted Acts.—Infectious Disease (Prevention) Act, 1890. Section 4.

Public Health Acts Amendment Act, 1890.—Part III.—Whole of ; Part IV.—Whole of.

Public Health Acts Amendment Act, 1907.—Part II.—Sections 20, 22, 23, 26, 27, 28, 29, 30, 31 and 33 ; Part III.—Sections 34, 35, 36, 37, 38, 43, 45, 48, 49, 50 and 51 ; Part IV.—Sections 52, 53, 56, 58, 59, 61, 62, 63, 64, 65 and 68 ; Part X.—Whole of.

Public Health Act, 1925.—Part II., Sections 15, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33 and 35 ; Part III.—Whole of ; Part IV.—Whole of ; Part V.—Whole of.

Local Acts.—Newcastle-upon-Tyne Improvement Act, 1837.

“	“	1846.
“	“	1853.
“	“	1865.
“	“	1870.
“	“	1882.
“	“	1892.

Newcastle-upon-Tyne Tramways and Improvement Act, 1899.

Newcastle-upon-Tyne Corporation Act 1911.

Newcastle-upon-Tyne Corporation Act 1926.

Newcastle-upon-Tyne Corporation (General Powers) Act, 1935.

CAUSE OF DEATH.	AGE PERIODS.										WARDS.										NET DEATHS.		TRANS-FERABLE DEATHS.		Deaths in Institutions in the City of Residents or Non-Residents.																		
	GROSS.										NET.										NET DEATHS.		TRANS-FERABLE DEATHS.																				
	Under 1 year	1 year and under 2	2 years and under 5	5 years and under 15	15 years and under 25	25 years and under 45	45 years and under 65	65 years and above	TOTAL (GROSS).	Under 1 year	1 year and under 2	2 years and under 5	5 years and under 15	15 years and under 25	25 years and under 45	45 years and under 65	65 years and above	TOTAL (NET).	St. Nicholas	St. Thomas	St. John's	Stephenson	Armstrong	Elswick		Westgate	Arthur's Hill	Benwell	Fulham	All Saints	St. Andrew's	Jesmond	Dene	Heaton	Byker	St. Lawrence	St. Anthony's	Walker	Inward	Outward			
I.—EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES.																																											
Enteric Fever					2	1			3						2			2																						1	4		
Measles	2	4	7		1				20	6	4	7						17										2	1												12		
Scarlet Fever	1	5	12	2		1			11	4	5	1			1			8			1	1	1					1	1												11		
Whooping Cough	5	12	2						9	4	2	1						7																						4			
Diphtheria	4	5	17						43	3	5	12	15					35		2	2	3	1					9	6		1				1	3		2		41			
Influenza	2	1		2	2	2	9	15	39	2	1		2	2		9	15	38	1	1	5		1				3	4	5	2											7		
Dysentery	2			1					4	1								2																							4		
Erysipelas	6					3	1	6	16	5								12				1						1		1	1										16		
Polioccephalitis																																											
Encephalitis Lethargica					3	4	3		10					3	4	3		10	1				1					1	1	1	1											5	
Cerebro-Spinal Fever	3		5	4	3		1		16	3			3	1				7	1			1	1																			16	
Tetanus				4		1	1		6							1		1																							6		
Tuberculosis of the Respiratory System	2	3	3	11	74	106	75	12	286	1	1	1	8	71	99	72	12	265		2	10	27	12	16	12	7	16	20	14	12	2	17	14	6	11	40	27	5	26	141			
Tuberculosis of the Central Nervous System		8	8	15	9	3	1		44		4	6	4	2	2	1		19		1																						39	
Tuberculosis of the Peritoneum and Intestines		1	1	3	5	6	4		20			1	1	2	3	3		10																								19	
Tuberculosis of the Vertebral Column				1	1	1			3				1	1	1			3		1	1																					3	
Tuberculosis of the Bones and Joints					1	1		2	4								1	2																								4	
Tuberculosis of Genito Urinary System						1			1						1			1																								1	
Tuberculosis of other Organs						1			1						1			1																								1	
Disseminated Tuberculosis	2	2	2	1	3	2	2	1	15			1	1	2	1		1	7		1								2		1												13	
TOTAL TUBERCULOSIS	4	14	14	31	93	121	82	15	374	1	6	9	15	78	109	76	14	308		5	11	27	12	17	12	8	22	26	19	13	2	19	16	6	13	48	32	6	72	221			
Syphilis	4					5	22	1	32	2					4	20	1	27					1	3	2	2	3	1			2				5	2	4			5	22		
Pyæmia, Septicæmia	3			4	1	3	6	1	18	1			2		1	1		5				1																				17	
Other Diseases due to Protozoa						3	1		4									1																								4	
Hydatid Cysts					1				1																																	1	
Other Diseases due to Helminths		1							1		1							1																								1	
Other Infectious or Parasitic Diseases	3	3							6	2	1							3					1																			6	
II.—CANCER AND OTHER TUMOURS.																																											
Cancer of the Buccal Cavity						21	15		36									17		2	1	2	1	3	2	1	2	3	2														19
Cancer of the Digestive Organs and Peritoneum					2	26	171	167	366					19	97	119	235		13	9	18	9	22	12	8	14	23	12	6	7	12	17	7	3	10	15	21	3	134	214			
Cancer of the Respiratory Organs						6	22	12	40					4	15	8	27		1		1	1																				28	
Cancer of the Uterus						5	18	10	33					4	14	9	27		1		2																					13	
Cancer of the Female Genital Organs						3	7	5	15					2	3	4	9					1	1																			10	
Cancer of the Breast						7	26	11	44					6	20	10	36				1	1	3	1			4	2	2		2												17
Cancer of Male Genito Urinary System						3	8	10	21					3	4	8	15																										15
Cancer of the Skin		1					5	4	10						2	4	6						1	1																		7	
Cancer of other or unspecified Organs					2	5	24	17	48						15	13	28	9		1				4	2	1	3	1	3		2												30
Tumours (not malignant)				1		9	12	1	23						2	6	1	9																									23
Tumours of undetermined nature			1	2	2	15	14	5	39			1			4	7	3	15																									32
III.—RHEUMATISM, DISEASES OF																																											

VITAL STATISTICS, YEAR 1936, AND INFECTIOUS DISEASES.

COMPARISON WITH OTHER DISTRICTS.

DISTRICT.	Birth Rate.	General Death Rate.	Death Rate adjusted by Comparability Factor.	Infantile Mortality Rate.	Death Rate per 1,000 from Enteric Fever, Smallpox, Scarlet Fever, Measles, Whooping Cough, and Diphtheria.	Tuberculosis (all forms) Death Rate.	ATTACK RATE PER 1,000 POPULATION.					ATTACK RATE PER 1,000 BIRTHS. (live & still)	
							Small-pox.	Typhus.	Scarlet Fever.	Diphtheria.	Enteric Fever and Continued Fever.		Erysipelas.
England and Wales	14.8	12.1	..	59	0.21	†	0.0	..	2.53	1.39	0.06	0.40	3.27
122 Great Towns (including London)	14.9	12.3	..	63	0.25	†	0.0	..	2.18	1.31	0.05	0.38	3.46
NEWCASTLE UPON TYNE ..	15.6	13.1	14.80	90	0.24	1.04	..	..	3.22	2.38	0.03	0.61	2.12
Hull	18.4	12.7	14.0	65	0.64	0.96	..	..	3.53	3.43	0.09	0.35	1.85
Leeds	15.0	13.6	14.56	65	0.26	0.83	..	..	3.81	1.63	0.01	0.59	9.92
Bradford	13.4	14.9	14.93	83	0.31	0.66	..	..	4.11	3.07	0.03	0.61	4.88
Sheffield	15.2	12.2	13.79	59	0.34	0.68	..	..	4.85	3.86	0.04	0.68	5.00
Manchester	14.7	13.5	15.39	77	0.35	1.01	..	..	3.12	1.56	..	0.48	8.93
Salford	15.0	14.0	16.5	90	0.53	1.14	..	..	2.64	2.86	0.01	0.42	3.39
Liverpool	20.1	12.9	14.8	75	0.49	0.97	0.00	0.00	1.80	2.51	0.02	0.82	2.32
Nottingham	15.2	13.2	13.60	89	0.28	0.93	..	..	2.61	1.44	0.04	0.50	1.1
Leicester	14.5	11.6	11.80	58	0.07	0.90	..	..	2.0	1.0	0.05	0.55	3.6
Stoke-on-Trent	16.8	12.4	15.1	74	0.28	0.85	0.0	0.0	2.19	1.41	0.02	0.32	6.21
Birmingham	15.8	11.3	12.4	62	0.21	0.78	..	..	3.84	1.10	0.03	0.62	5.66
Cardiff	15.1	12.6	13.3	55	0.17	1.05	..	..	1.60	1.52	0.04	0.35	18.17
Bristol	14.2	12.3	12.02	48	0.19	0.81	0.00	0.00	2.00	1.07	0.05	0.46	1.95
Portsmouth	15.6	11.8	11.69	49	0.11	0.81	..	..	2.78	0.97	0.04	0.24	2.21
London (County)	13.6	12.4	12.60	66	0.28	0.78	..	..	2.55	1.67	0.06	0.43	2.97
Gateshead	17.2	13.2	14.9	91	0.43	1.12	..	..	2.99	1.26	..	0.60	2.32
South Shields	16.9	13.2	14.8	87	0.44	1.09	..	..	5.92	0.74	0.01	0.53	4.1
Tynemouth	18.1	11.6	12.84	65	0.16	0.93	..	..	1.33	0.59	0.21	0.34	0.79
Sunderland	19.6	12.8	14.3	72	0.27	0.91	0.00	0.00	2.71	2.15	0.03	0.74	3.46
Middlesbrough	18.5	12.2	14.39	73	0.25	1.07	..	..	2.44	1.02	0.01	0.63	5.52
*County of Northumberland ..	15.3	12.0	12.74	70	0.18	0.71	..	..	3.33	1.91	0.07	0.47	1.54
*County of Durham	17.3	11.9	13.6	71	0.43	0.77	..	..	5.26	3.57	0.05	0.56	1.60

* Administrative County.

† Not available.

Vital Statistics of Whole District during 1936 and previous Years.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NET DEATHS BELONGING TO THE DISTRICT.			
		Uncor-rected Number	Net.		Number	Rate.	of Non-resi-dents regis-tered in the District	of Resi-dents not reg-istered in the District	Under 1 Year of Age.		At all Age	
			Number	Rate.					Number	Rate per 1,000 Nett Births.	Number	Ra
1	2	3	4	5	6	7	8	9	10	11	12	1
1911	267,261	7,089	7,082	26.5	4,667	17.5	448	165	973	137	4,384	16.5
1912	269,193	7,219	7,194	26.7	4,221	15.7	529	146	727	101	3,838	14.1
1913	271,295	7,480	7,460	27.5	4,611	17.0	560	141	908	122	4,192	15.3
1914	271,523	7,564	7,538	27.8	5,069	18.7	546	138	1,029	137	4,660	17.1
1915	278,107	7,575	7,545	27.8	5,257	18.9	693	207	1,007	133	4,771	17.5
1916	278,107	7,332	7,248	26.2	4,875	17.5	680	232	899	123	4,427	16.1
1917	278,107	6,548	6,495	23.4	4,646	16.7	718	246	732	113	4,174	15.4
1918	278,107	6,555	6,468	23.3	5,380	19.3	872	308	692	107	4,816	17.7
1919	275,099	6,793	6,674	23.3	5,358	19.5	737	234	806	120	4,855	17.8
1920	286,061	8,433	8,070	28.0	4,609	16.1	779	195	817	101	4,025	14.9
1921	278,400	7,720	7,284	26.2	4,602	16.5	817	142	699	96	3,927	14.3
1922	281,600	7,432	6,987	24.8	4,698	16.7	831	145	646	92	4,012	14.6
1923	283,800	6,961	6,367	22.4	4,298	15.1	789	150	623	98	3,659	13.2
1924	285,900	7,029	6,335	22.2	4,607	16.1	929	172	632	100	3,850	13.6
1925	286,300	7,031	6,215	21.6	4,732	16.5	989	165	550	88	3,908	13.7
1926	284,700	6,728	6,007	21.0	4,460	15.7	979	161	530	88	3,642	13.1
1927	288,500	6,215	5,395	18.7	4,468	15.5	1,058	178	474	88	3,588	12.7
1928	281,500	6,360	5,429	19.2*	4,683	16.6	1,178	179	447	82	3,684	13.1
1929	283,400	6,120	5,126	18.1	5,040	17.8	1,313	172	438	85	3,899	13.8
1930	283,400	6,190	5,223	18.4	4,665	16.5	1,232	133	384	74	3,566	12.7
1931	283,600	6,058	5,056	17.8	4,911	17.3	1,251	145	467	92	3,805	13.5
1932	285,100	6,006	4,883	17.1	4,579	16.0	1,174	134	370	76	3,539	12.5
1933	286,500	5,770	4,712	16.4	4,695	16.4	1,182	127	359	76	3,640	12.8
1934	287,050	5,848	4,695	16.4	4,823	16.8	1,322	145	389	83	3,646	12.8
1935	292,700†	5,895	4,666	16.0	5,040	17.3	1,489	121	400	86	3,672	12.9
1936	290,400	5,709	4,537	15.6	5,148	17.4	1,421	151	408	90	3,878	13.3

* Calculated on a population of 282,200. † Rates calculated on a population of 291,025.

Corrected Death Rates in different Wards, 1936.

St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.
8.8	9.8	12.8	14.9	13.5	18.2	14.7	13.7	14.7	13.6	13.2	13.3	13.8	11.3	13.7	11.1	12.0	17.6	11.3

All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

CAUSES OF DEATH AT DIFFERENT PERIODS OF LIFE FOR 1936.

(REGISTRAR GENERAL'S RETURN).

CAUSES OF DEATH.	Sex	All Ages	0—	1—	2—	5—	15—	25—	35—	45—	55—	65—	75—
All Causes	M. F.	2013 1813	238 167	24 39	29 29	37 43	75 85	81 90	128 105	235 151	393 272	465 417	308 415
1—Typhoid and para- typhoid fevers	M. F.	1 1	.... ....	.... ....	.... ....	.... ....	.... 1	1....	........	........	........	........	........
2—Measles	M. F.	7 11	4 2	1 3	2 6	........	........	........	........	........	........	........	........
3—Scarlet Fever	M. F.	2 6	.... ....	.... 5	2 ....	.... 1	........	........	........	........	........	........	........
4—Whooping Cough	M. F.	3 5	2 3	1 1	.... 1	........	........	........	........	........	........	........	........
5—Diphtheria	M. F.	17 18	3	3 2	5 7	6 9	........	........	........	........	........	........	........
6—Influenza	M. F.	20 18	2 ....	.... 1	.... ....	.... 1	1 1	2	1 4	5	2 2	3 4	4 5
7—Encephalitis lethargica	M. F.	4 8	.... ....	.... ....	.... ....	.... ....	2 1	.... 4	1 ....	.... 2	1 1	........	........
8—Cerebro-spinal fever	M. F.	2 3	1 1	.... ....	.... ....	1 2	........	........	........	........	........	........	........
9—Tuberculosis of respiratory system	M. F.	153 112	1 ....	.... 1	.... 1	3 6	27 43	25 24	33 16	31 11	24 6	8 4	1
10—Other tuberculous diseases	M. F.	15 24	.... ....	3 2	2 5	4 3	4 2	2 4	.... 3	.... 1	.... 3	.... 1	........
11—Syphilis	M. F.	14 11	3 ....	.... ....	.... ....	.... 1	.... 1	.... 1	2 1	4 4	5 3	........	........
12—General paralysis of the insane, tabes dorsalis	M. F.	15 3	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	4 1	6	5 2	........	........
13—Cancer, malignant disease	M. F.	208 212	.... ....	.... ....	.... ....	.... ....	.... 1	4 5	15 12	29 30	64 66	69 71	27 27
14—Diabetes	M. F.	13 29	.... ....	.... ....	.... ....	.... ....	.... ....	2 ....	.... 2	.... 4	6 6	3 13	2 4
15—Cerebral hæmorrhage, etc.	M. F.	93 82	.... ....	.... ....	.... ....	.... ....	.... ....	1 1	2 1	6 5	31 18	36 31	17 26
16—Heart disease	M. F.	470 463	.... 1	.... ....	.... 1	.... 2	6 6	8 11	17 18	46 31	111 72	175 156	107 165
17—Aneurysm	M. F.	11 7	.... ....	.... ....	.... ....	.... 1	.... 1	.... 1	1 1	2 2	5 1	3....	........
18—Other circulatory diseases	M. F.	134 142	.... ....	.... ....	.... ....	.... ....	.... ....	1	1	5 5	20 21	47 47	60 69

Causes of Death at different periods of life
for 1936—*continued*.

CAUSES OF DEATH.	Sex	All Ages	0—	1—	2—	5—	15—	25—	35—	45—	55—	65—	75—
19—Bronchitis	M. F.	64 46	1 1	2 ....	.... 1	.... 2	1 1	.... ....	.... ....	12 1	13 5	19 12	16 23
20—Pneumonia (all forms)	M. F.	154 93	28 24	7 10	8 3	1 3	8 4	7 4	12 4	28 3	30 11	18 16	7 11
21—Other respiratory diseases	M. F.	15 8	.... ....	1	1 1	1 ....	.... ....	1 1	2 2	2 2	3	3 1	1 1
22—Peptic ulcer	M. F.	29 7	.... ....	.... ....	.... ....	.... ....	.... ....	3	7 1	6 3	7 1	5 2	1
23—Diarrhœa, etc.	M. F.	59 56	48 38	3 8	1 2	2 1	.... ....	.... 1	2 1	1 1	.... 1	1	1 3
24—Appendicitis	M. F.	12 4	.... ....	.... ....	.... ....	2	1 ....	.... ....	1	2 2	5	1 1	.... 1
25—Cirrhosis of liver	M. F.	9 1	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	1	3 1	3	1	1
26—Other diseases of liver, etc.	M. F.	7 21	.... ....	.... ....	.... ....	.... ....	.... ....	.... 1	.... 1	1 3	4 6	1 7	1 3
27—Other digestive diseases	M. F.	25 27	3 2	1 ....	.... ....	.... 1	1 ....	.... 2	1 2	6 3	4 8	6 5	3 4
28—Acute and chronic nephritis	M. F.	56 63	.... ....	.... ....	.... ....	1	3 3	2 3	5	6 7	12 15	16 11	11 24
29—Puerperal sepsis	F.	11	....	....	....	....	3	7	1	....	....	....	....
30—Other puerperal causes	F.	17	....	....	....	....	5	5	7	....	....	....	....
31—Congenital debility, premature birth, malformation, etc.	M. F.	115 73	115 72	.... ....	.... ....	.... ....	.... ....	.... 1	........	........	........	........	........
32—Senility	M. F.	21 41	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	5 7	16 34
33—Suicide	M. F.	28 14	.... ....	.... ....	.... ....	.... ....	2	6	2 3	6 4	8 5	2 2	2
34—Other violence	M. F.	81 37	2 ....	.... 2	4 1	10 4	10 1	9 3	10 5	16 7	6 4	8 4	6 6
35—Other defined diseases	M. F.	153 138	25 23	2 4	4	6 6	9 11	7 11	8 19	12 19	24 14	34 22	22 9
36—Causes ill-defined, or unknown	M. F.	3 1	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... 1	1	2

Resident Population 290,400.

UNDER 1 YEAR.

	<i>Legitimate.</i>	<i>Illegitimate.</i>
M.	232	6
F.	157	10

HOSPITALS.

Name.	Purpose.	No. of Beds.	For Newcastle Cases.	For Cases from outside City.
MUNICIPAL.				
City Hospital for Infectious Diseases	Infectious Diseases, Tuberculosis	338	338	....
Smallpox and Isolation Hospitals	Smallpox and Isolation	172	172	....
Newcastle General Hospital	Medical, Surgical and Maternity	Men 271 Women 319 Children 205	795	....
Barrasford Sanatorium, Barrasford	Tuberculosis	95	75	20
Newcastle Mental Hospital, Gosforth	Mental	1,067	1,067	....
Shotley Bridge Colony, Shotley Bridge	Mental Defectives	473	473	....
St. Mary Magdalene Hospital, Newcastle	Chronic Sick	96	96	....
VOLUNTARY.				
Royal Victoria Infirmary, Newcastle	General, Medical and Surgical, Venereal Diseases, etc.	708	208	500
Do.	Convalescents	50	....	....
Fleming Memorial Hospital, Newcastle	Children	88	30	58
Princess Mary Maternity Hospital, Newcastle	Maternity	73	30	43
Eye Infirmary, Newcastle	Eyes	35	11	24
Throat, Nose and Ear Hospital, Newcastle	Throat, Nose and Ear	35	....	....
Hospital for Diseases of the Chest, Newcastle	Diseases of the Chest	Out patients	only.	
Catherine House, Newcastle	Maternity	20	....	....
Babies' Hospital and Mothercraft Centre, Newcastle	Children	26	13	13
Stannington Sanatorium, Stannington	Tuberculosis (Children)	310	30	280
Dental Hospital, Newcastle	Dental.....	Out patients	only.	
Walker Accident Hospital	Shipyard Accidents	21	21	....
Newcastle Dispensary	General, Medical	Out patients	only.	
Hospital for Diseases of the Skin	Skin Diseases	6	....	....
Hospital for Women	Women	Out patients	only.	
Sanderson's Home for Crippled Children, Gosforth	Children	134	67	67

**REPORT OF THE
MATERNITY AND CHILD WELFARE
MEDICAL OFFICER.**

II.—THE CHILD.

**INFANTILE MORTALITY, MATERNITY AND
CHILD WELFARE, NURSING HOMES.**

INFANTILE MORTALITY.

SUMMARY OF BIRTHS AND DEATHS, 1936.

	LEGITIMATE.			ILLEGITIMATE.			Grand Total.
	M.	F.	Total.	M.	F.	Total.	
Total Births in the year	2,838	2,617	5,455	126	128	254	5,709
Net ,, ,, ,, ,,	2,257	2,110	4,367	86	84	170	4,537
Net Deaths under 1 year	231	156	387	7	14	21	408
Death Rate per 1,000 births	102	74	89	80	167	124	90

BIRTHS AND DEATHS (NET), 1936.

WARD.	Births.	Deaths under 1 year of age.	Children under 1 year of age—Death rate per 1,000 births.	Birth rate per 1,000 population.
St. Nicholas'	2	—	—	1.1
St. Thomas'	153	14	92	10.0
St. John's	150	18	120	12.6
Stephenson	304	35	115	17.2
Armstrong	290	31	107	20.2
Elswick	195	19	97	14.7
Westgate	205	21	102	15.1
Arthur's Hill.....	91	7	77	9.8
Benwell	523	45	86	23.4
Fenham.....	462	39	84	18.0
All Saints'	210	22	105	15.2
St. Andrew's.....	137	15	109	13.0
Jesmond.....	94	9	96	8.5
Dene	201	8	40	10.8
Heaton	117	11	94	8.8
Byker	211	13	62	14.6
St. Lawrence.....	293	25	85	16.5
St. Anthony's	414	45	109	26.6
Walker	485	31	64	16.2
CITY	4,537	408	90	15.6

All births and deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

ANALYSIS OF INFANTILE MORTALITY.

	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Death-rate of Infants <i>under</i> 1 year per 1,000 births	88	82	85	74	92	76	76	83	86	90
Death-rate of Infants <i>under</i> 3 months per 1,000 births	55.6	50.8	52.5	46.7	48.1	51.2	45.0	57.2	57.4	58.4
Death-rate of Infants from <i>Premature Birth</i> , per 1,000 births	22.6	20.6	24.5	17.8	20.2	20.7	20.4	21.5	21.9	23.4
Death-rate of Infants <i>under</i> 1 year per 1,000 births from <i>Premature Birth</i> , plus all <i>Congenital Causes</i> *	38.6	35.4	38.8	33.7	34.2	37.3	36.7	38.6	43.3	42.5
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Diarrhoea</i> and all <i>other Digestive Diseases</i> † ..	9.3	13.4	15.0	11.3	12.5	9.2	12.9	13.4	13.7	22.2
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Infantile Atrophy</i> , <i>Debility</i> and <i>Marasmus</i>	6.5	4.4	3.7	4.6	2.2	4.9	4.7	4.5	5.6	5.7
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Measles</i>	0.6	2.2	3.7	0.5	5.7	0.8	1.5	1.9	0.6	1.3
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Whooping Cough</i>	1.3	3.9	1.4	2.5	2.6	2.5	2.3	1.9	2.4	0.9
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Respiratory Diseases</i>	27.1	16.6	16.4	16.8	24.7	16.0	12.9	15.5	15.9	12.1
Death-rate of Infants <i>under</i> 1 year per 1,000 births, from <i>Tuberculosis</i> (all forms)	2.4	1.3	1.0	1.1	2.0	0.8	1.3	0.9	0.9	0.2

For particulars of deaths, as to causes, etc., see Table on page 46A.

* “ *All Congenital Causes* ” includes Syphilis, Congenital Defects and Diseases of Early Infancy.

† “ *Diarrhoea and all other Digestive Diseases* ” includes Diarrhoea, Dysentery, Epidemic or Zymotic Enteritis, Rickets, Diseases of the Stomach, Enteritis, Obstruction of Intestine, Peritonitis and other Diseases of the Digestive System.

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 53 WEEKS ENDED 2ND JANUARY, 1937.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NET (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	
EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES.																					
Measles	2	2	3	1	8	...	...	...	...	...	2	2	1	1	6	7
Scarlet Fever.....	1	...	1	...	...	...	...	...	...	...	...	...	1	1
Whooping Cough	4	1	...	5	...	...	...	...	...	...	3	1	...	4	1
Diphtheria.....	1	...	...	3	4	...	...	...	...	...	...	...	...	3	4	4
Influenza	1	...	1	...	2	...	...	...	...	...	1	...	1	...	2	2
Dysentery	1	1	...	...	2	...	...	...	...	...	1	...	...	...	1	2
Erysipelas	1	3	2	...	6	...	...	...	...	...	1	2	2	...	5	6
Cerebro-Spinal Fever	2	...	1	3	...	...	...	...	...	...	2	...	1	3	3
Tuberculosis of the Respiratory System	1	1	...	...	2	...	...	...	...	...	1	...	...	...	1	2
Disseminated Tuberculosis	1	...	1	2	...	...	...	...	...	...	...	...	...	...	2
TOTAL TUBERCULOSIS	1	2	...	1	4	...	...	...	...	...	1	...	...	...	1	4
Syphilis.....	2	2	...	...	4	...	...	...	...	...	1	1	...	...	2	4
Pyæmia Septicæmia	2	...	2	1	...	...	...	3	...	...	1	...	1	...	...	...	...	1	3
Other Infectious or Parasitic Diseases	3	...	3	...	...	...	...	...	...	...	2	...	2	3
RHEUMATISM, DISEASES OF NUTRITION AND OF ENDOCRINE GLANDS AND OTHER GENERAL DISEASES.																					
Chronic Rheumatism	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Rickets	1	1	...	...	...	...	...	...	...	...	1	1	1
Other General Diseases.....	1	...	...	1	...	...	...	...	...	...	1	...	...	1	...
DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.																					
Hæmorrhagic Conditions	2	1	...	...	3	...	...	...	...	3	...	1	...	...	1	...	...	...	...	1	2
DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.																					
Meningitis	1	...	2	3	...	...	...	...	...	...	...	...	1	1	2
Infantile Convulsions.....	3	2	2	...	7	3	4	2	...	16	3	2	1	...	6	3	4	2	...	15	2
Diseases of the Ear and Mastoid Sinus	1	2	5	...	8	...	...	...	...	...	1	...	5	...	6	8
Other Diseases of the Nervous System.....	...	1	...	...	1	1	...	...	...	2	...	...	...	...	...	1	...	...	...	1	1
DISEASES OF THE CIRCULATORY SYSTEM.																					
Diseases of the Lymphatic System	1	...	...	1	2	...	...	...	...	...	1	...	...	...	1	2
" " Myocardium	1	...	...	1	...	...	...	...	...	...	1	...	...	1	...
DISEASES OF THE RESPIRATORY SYSTEM.																					
Bronchitis	1	2	...	3	3	...	1	...	7	...	...	1	...	1	1	...	1	...	3	5
Broncho Pneumonia.....	...	1	3	1	5	8	19	10	16	58	...	...	3	1	4	6	13	8	10	41	38
Lobar Pneumonia.....	1	...	1	2	3	2	1	9	...	...	1	...	1	1	2	1	1	6	6
Pneumonia (not otherwise defined)	2	3	1	6	...	...	...	...	...	...	2	3	...	5	1
Carried forward	6	6	10	1	23	29	49	34	28	163	3	3	7	1	14	21	33	27	18	113	109

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 53 WEEKS ENDED 2ND JANUARY, 1937.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NET (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	
Brought forward	6	6	10	1	23	29	49	34	28	163	3	3	7	1	14	21	33	27	18	113	109
DISEASES OF THE DIGESTIVE SYSTEM.																					
Diseases of the Buccal Cavity, Pharynx, etc. ....	...	...	...	...	...	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	2
Other Diseases of the Stomach.....	...	...	1	...	1	1	1	...	...	3	...	...	1	...	1	1	1	...	...	3	...
Diarrhoea and Enteritis.....	1	7	25	10	43	27	36	17	10	133	1	3	15	7	26	19	26	14	9	94	114
Hernia, Intestinal Obstruction .....	...	...	...	...	...	...	3	5	1	9	...	...	...	...	...	...	1	1	...	2	...
NON-VENEREAL DISEASES OF GENITO-URINARY SYSTEM AND ANNEXA.																					
Acute Nephritis .....	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Other Diseases of the Kidney and Annexa .....	...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...	...	1	1	2	1
Cystitis .....	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...
Diseases of the Male Genital Organs.....	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
DISEASES OF SKIN AND CELLULAR TISSUE.																					
Cellulitis, Acute Abscess .....	...	...	...	...	...	1	1	...	1	3	...	...	...	...	...	...	1	...	...	1	3
CONGENITAL MALFORMATIONS.																					
Congenital Malformations	19	3	4	2	28	10	8	3	1	50	12	2	3	1	18	5	4	...	...	27	36
DISEASES OF EARLY INFANCY.																					
Congenital Debility	6	3	10	5	24	6	5	...	1	36	5	2	7	3	17	4	4	...	1	26	20
Premature Birth.....	94	28	20	11	153	6	1	...	...	160	59	18	15	10	102	4	4	...	...	106	106
Injury at Birth	16	5	1	...	22	1	...	...	...	23	6	1	1	...	8	...	...	...	...	8	20
Atelectasis	16	...	...	1	17	...	...	...	...	17	12	...	...	...	12	...	...	...	...	12	6
Icterus Neonatorum.....	1	2	1	1	5	1	...	...	...	6	1	2	1	1	5	1	...	...	...	6	6
Other Diseases peculiar to Early Infancy	4	2	1	1	8	2	...	...	...	10	3	...	1	1	5	1	...	...	...	6	6
DEATHS BY VIOLENCE.																					
Violent Deaths of Unstated Nature .....	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	1	...
ILL-DEFINED DISEASES.																					
Causes of Death Unstated or Ill-defined	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
TOTAL.....	164	56	73	32	325	86	107	61	43	622	102	31	51	24	208	57	70	44	29	408	432

Report of the Maternity and Child Welfare Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I have the honour to submit to you my seventeenth annual report.

Innovations.

The following additional services and altered conditions were provided during the year :—

Ante-Natal Sessions were established in Scotswood, St. Lawrence and Heaton Centres, and sessions for children were added at Scotswood and Cowgate Centres. The Scotswood Centre, previously conducted in St. Margaret's Church Hall, Denton Road, was moved to the new hall in Norland Road, in which improved accommodation is provided.

A new Centre was opened in St. Francis Church Hall, Cragside, for the use of residents in the new estate which is rapidly developing in that area.

Diphtheria Immunisation.

No. of Clinics held :

Diana Street, Monday	42
Scotswood, Wednesday	24
Byker, Wednesday	14
„ Thursday	16
Walker, „	28
Diana Street, Saturday	36
Byker, „	7
Denton School, Wednesday	5
Atkinson Road School, Tuesday	5

177

TOTALS FOR 1936.

Total No. of New Children sent for.	Total Atten- dances for 1st Treatment.	Total Atten- dances for 2nd Treatment.	Total Atten- dances for 3rd Treatment.	Total Atten- dances.
2,398	1,745	1,592	1,466	4,803

Dental, Aural and Nasal Treatment.

Under the arrangements made with the Education Authority 243 nursing or expectant mothers and 359 children were referred for dental treatment. Of these 190 women and 285 children were treated.

Similarly 204 children were sent for aural and nasal treatment and of these 133 were treated.

Whalton Rest Home.

Twenty-two mothers accompanied by 22 children were sent through the Centres for two weeks' holiday at the Rest Home during the year. All were enthusiastic in their praise of the Home and of the pleasure and benefit which they had derived from their holiday.

Orthopædia.

179 new cases were visited during the year. Of these 113 have attended for examination by the Orthopædic Surgeon at the Education School Clinic and a total of 280 examinations and re-examinations were made. Of cases notified to attend for examination four parents refused.

Average number attending twice weekly for treatment	
—Massage and Exercises	25
Admitted to the W. J. Sanderson Orthopædic Hospital School.....	8
Waiting for admission to the W. J. Sanderson Orthopædic Hospital School	4
Refused institutional treatment.....	4
X-Ray Examinations.....	12
Photographic Records.....	3

40 cases attended other institutions.

SURGICAL APPLIANCES :—

Plaster of Paris splints made in	3 cases (9 plasters).
New splints supplied in	28 „
New boots supplied in	64 „
Alterations to boots in	42 „
Splints repairs in	17 „

During the year 406 children were visited. This includes the 179 new cases ; of these

Parents refused any kind of treatment in	14 cases.
Left City	11 „
Died	3 „
Attained the age of 5 years	45 „
	<hr/>
	73 „

leaving 333 on visiting list at end of 1936.

Classification of 179 New Cases Visited.

CONGENITAL DEFORMITIES :—

Congenital Club Feet.....	7
Congenital Flat Feet	3
Congenital Abnormalities—Toes	2
Spastic Paralysis.....	5
Poliomyelitis	7
Ataxia	1
Mentally Defective and M.D. Paralysis	1
Old injury to lower limb	2
Disparity in Growth of Legs.....	2
Torticollis	1
Muscular Dystrophy	1
Tubercular Spine	1
Tubercular Knee.....	1
Flat Feet.....	36
Rickets—Bow Legs	42
Knock Knees and Flat Feet.....	48
General	8
Talipes Calcaneus	1
Metatarsal Varus	1
Renal Dwarfism	1
Contracture of Elbow	1
Pecularity of Gait	4
Injury to Finger.....	1
Periostitis	1
Œdema of Feet	1
	<hr/>
TOTAL.....	179

Home Helps.

During the year 16 mothers were supplied with the services of a Home Help. Of these six contributed towards the cost.

Maternity Hospital.

Free beds in the Princess Mary Maternity Hospital were placed at the disposal of 119 women and 41 others were admitted to the Newcastle General Hospital for confinement during the year. In addition free outdoor attendance on the various districts by the Professional Staff of the Hospital was provided for 150 women. The necessary orders were given by the Medical Officers at the Centres.

Ante-Natal Centres.

During the year 1,847 women attended the Municipal Clinics, this being a decrease of 189 over the corresponding figure for the previous year.

The following table shows the attendances at the ante- and post-natal clinics :—

CENTRE.	ANTE-NATAL		POST-NATAL.	
	Attendance.	Individuals.	Attendance.	Individuals.
Benwell	1,089	290	121	39
Byker	1,679	388	14	4
Fenham.....	569	135	1	1
Diana Street.....	807	212	2	2
Elswick	901	274	2	2
Heaton	75	20	1	1
Scotswood.....	305	68	33	22
St. Lawrence	200	40	2	2
Walker	585	231	....	....
Wharnccliffe St. ..	995	189	4	4
	7,205	1,847	180	77

WOMEN ATTENDING ANTE-NATAL CENTRES.

The following details refer to the confinements of 1,709 expectant mothers who attended the municipal ante-natal centres during 1936, and whose children were born during that year.

Mothers were sent to the ante-natal centres by the following :—

	<i>Cases.</i>	<i>Percentage.</i>
Doctors	243	14.2
Midwives	284	16.6
Health Visitors on Districts.....	123	7.2
Welfare Centres and Voluntarily.....	1,059	62.0
	<u>1,709</u>	

The result of the subsequent confinements were :—

Type of Confinement.	Number of Cases.	Resulting in		
		Living Children.	Still-born Children.	Sets of Twins.
Normal.....	1,338	1,301	27	10
Instrumental	215	170	38	7
Cæsarian Section	16	14	2	....
Induction.....	3	3	....	....
Abortion	19	....	....	....
	1,591	1,488	67	17
Not Pregnant.....	64	....	....	....
Left City.....	54	....	....	....
Total	1,709			

Abnormalities were found in 101 or 5.9 per cent. of the cases, and the ultimate results were as follows :—

Abnormality.	No.	Normal Confinements.			Instrumental Confinements.			Cæsarian Sections.			Induced Labour.		
		No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.
Breach Presentation	59	37	34	3	20	13	7	2	2	..	..	..	..
Deformed Pelvis ..	8	2	2	..	..	..	..	6	6	..	..	..	..
Albuminuria.....	21	17	15	2	3	3	..	..	..	..	1	1	..
A.P. & P.P. Hæmorrhage	13	6	5	1	7	2	5	..	..	..	..	..	..

7 mothers subsequently died :—Sepsis, 3; Cardiac Disease, 1; Toxæmia, 2; Pneumonia, 1.

Notices for medical help sent to Local Authority by the midwives :—

FOR THE MOTHER.

During Pregnancy—

Ante Partum Hæmorrhage....	21
Abortions.....	3
Illness	7
Albuminuria & Puffiness of hands and feet	14
	<hr/>
	45

During Labour—

Uterine Inertia	79
Malpresentations	37
Retained Placenta	3
Post Partum Hæmorrhage....	9
Ruptured Perineum.....	129
	<hr/>
	257

During Puerperium—

Rise of Temperature.....	14
Eclampsia	1
Undefined Illness of Mother	21
	<hr/>
	36
Total calls for mother	<hr/> <hr/> 338

FOR CHILD.

Prematurity	26
Discharging Eyes	36
Congenital Defects	6
Illness of Baby	25
Still-births	3
Rashes	5
	<hr/>
	101

Total calls for mother and child

439

In 24.3 per cent. of the midwives' cases the services of a doctor were requisitioned.

Claims from doctors for fees in respect of calls from midwives :—

	Cases.
For forceps delivery	102
For post partum hæmorrhage.....	6
For ante partum hæmorrhage.....	10
For illness of mother	36
For illness of child	56
For premature birth.....	9
For discharging eyes	17
Other	104
Specialists called in.....	6
<hr/>	
Total cases	346
<hr/>	

20 claims for *payment of midwives' fees* were received.

Maternal Mortality.

4,537 live and 190 still-born births belonging to the City occurred during the year. 28 women died as a result of childbirth, a mortality rate of 5.92 per 1,000 live and still births as compared with 5.13 in the previous year.

CAUSES.	1936	1935	1934	1933	1932
Abortions (Septic)	4	....	1	1	1
Abortions (Not Septic)	3	1	1	4	1
Accidents of Pregnancy	1	....	1	....	....
Puerperal Hæmorrhage	1	3	3	4	3
Other Accidents of Childbirth	1	2	2	2	4
Puerperal Fever	6	12	7	7	9
Other Toxæmias of Pregnancy	1	1	1	2	2
Puerperal Phlegmasia .....	....	4	1	....	1
Puerperal Insanity .....	....	....	....	....	....
Puerperal Disease of Breast ....	....	....	....	....	....
Ectopic Gestation	1	....	1	....	1
Unspecified conditions of puerperal state	3	....	2	2	....
Puerperal Albuminuria and Convulsions	7	2	6	....	....
	28	25	26	22	22

Puerperal Septicæmia and Puerperal Pyrexia.

One hundred and thirty cases were notified during the year—35 puerperal fever and 95 pyrexia. Details of these are embodied in the following table :—

	Total Cases Notified.	Newcastle Cases.	Extra Mural Cases.	Admitted to Hospital.	TOTAL DEATHS.	
Puerperal Septicæmia	35	9	26	123	Newcastle	10
					Extra Mural	33
Puerperal Pyrexia	95	19	76		Newcastle	0
					Extra Mural	0

Of the 28 City cases 26 were visited and the attendants at the confinements are indicated in the following table :—

	<i>Puerperal Septicæmia.</i>	<i>Puerperal Pyrexia.</i>
Doctors .....	....	....
Doctors and Midwives.....	1	3
Midwives	3	2
Princess Mary Maternity Hospital Staff	2	10
Newcastle General Hospital.....	2	2
Gables Maternity Home	1	....
	<hr/> 9	<hr/> 17
	<hr/>	<hr/>

Consultants' Services.

The services of Obstetrical Specialists were asked for and provided on six occasions and the Midwifery Emergency Service was sent to two cases during the year.

Midwives Acts.

Fifty-three midwives notified their intention to practise midwifery in the City. Two of these were registered as being in practice prior to the 1902 Act, and the remaining fifty-one qualified by examination and possessed the Certificate of the Central Midwives Board. Nine of them only did temporary work at Maternity Homes.

Midwives practising in the City attended approximately two-fifths of the total births taking place in the City. Midwifery bags, appliances, and records kept by practising midwives were examined as a routine, and all cases of ophthalmia neonatorum, puerperal pyrexia and septicæmia were carefully investigated and supervised. Clothing and appliances thought to be infected were disinfected—the owners being suspended from practice so long as was deemed necessary for the safety of others.

For these various purposes 622 visits were made ; 112 visits to septic patients, and 302 to cases of ophthalmia neonatorum were also made.

Births attended by Midwives.—1,711 (net) living births (a decrease of 107 on the previous year) and 49 (net) still-births (9 less than in 1935) were attended by midwives during the year. Midwives attended 38.0 per cent. of the net births in the City. In addition midwives attended in the capacity of maternity nurses with doctors in 347 cases, as compared with 298 in 1935.

Ultra-Violet Ray Therapy.

Those children who are brought to the Centres, and who are considered to be in need of artificial sunlight, are referred for such treatment to the Light Department of the Newcastle General Hospital, or to the Brinkburn Street Sun-Ray Clinic. 367 children were so referred during the year, and they received a total of 6,202 treatments.

Health Talks.

A lecture lasting about ten minutes and dealing with an appropriate subject—such as digestive disorders among children in the spring and summer, and the respirating diseases in the autumn and winter—is given by the Centre Health Visitor at every Centre. There is a complete syllabus of the subjects of these talks, and this is closely adhered to. It embraces everything conducive to maintaining good health in mothers and children, and the talks are listened to with interest.

Nursery Schools.

These were conducted by members of the Voluntary Association in Diana Street and Wharncliffe Street Centres, and were much appreciated and enjoyed by the parents and scholars respectively. It is a pleasure to pay public tribute to the ladies who are kind and interested enough to give their time and services every week for this praiseworthy object.

Births.

Of the 4,537 infants born alive in 1936, and belonging to Newcastle residents, 2,343 were boys and 2,194 were girls. Of the former 102 per 1,000, and of the latter 77 per 1,000 died during their first year.

26.1 per cent. of the City's births occurred in institutions, as shown in the following table :—

Nursing Homes	104
Princess Mary Maternity Hospital.....	573
Gables Maternity Home.....	136
Newcastle General Hospital.....	373
	<hr/>
	1,186
	<hr/>

The Birth Rate in the City for the year 1936 was 15.6 per 1,000 which is 0.4 less than the rate for 1935.

Illegitimate Births.

One hundred and seventy illegitimate children were born—this being 28 less than in the previous year. The death rate among these children is high everywhere, and in Newcastle in 1936 it was 124 per 1,000 compared with 89 per 1,000 legitimate children. Every effort is made to save these children, and when it is possible to get the mothers to bring the children regularly to the Centres the children's lives are practically secure. In all instances the single girl is provided with free milk for her infant when this is suitable and necessary.

Deaths of Children.

	1932	1933	1934	1935	1936
Deaths of children during first week of life	133	126	112	109	102
Deaths of children during first month	175	177	197	117	106
Deaths from prematurity	101	96	101	104	106
Deaths of twins and triplets.....	32	39	33	29	23

Toddlers.

As in previous years care and attention was bestowed on the children of toddling age, among whom health deteriorates rapidly unless it is closely watched. For the last seventeen years special efforts have been made in Newcastle to encourage mothers to bring toddlers to the Centres, and it is gratifying to report that of the 104,954 attendances at the Centres last year, more than half were made by children of 1–5 years of age.

TODDLERS ATTENDING THE CENTRES.

<i>Year.</i>	<i>Number of Children.</i>
1931	4,257
1932	4,422
1933	4,351
1934	4,198
1935	4,288
1936	4,315

Ophthalmia Neonatorum.

The number of cases notified was 54, of which 51 were City cases. 50 of these were visited. The confinements were attended by :—

Doctors	8
Midwives	20
Princess Mary Maternity Hospital.....	16
Doctor and Midwife.....	3
Newcastle General Hospital	2
Gables Maternity Home.....	1
	<hr/>
	50
	<hr/>

301 calls were made on the 50 visited cases in the City, and the ultimate results were :—

Recovered completely	46
Died	3
Slightly defective	1
	<hr/>
	50
	<hr/>

The *ophthalmia incidence* per 1,000 births for the last five years has been as follows :—

1932	9.2
1933	11.0
1934	11.5
1935	12.3
1936	11.2

Children Acts, 1908-1933.

At the beginning of the year there were 118 nursed-out children in the City, and 112 at the close of the year, with foster mothers (private) 51, Institutions 61.

CHILDREN IN INSTITUTIONS.

The Teresa Nursery	27
Convent of La Sagesse.....	8
The Northern Counties Orphanage	13
Northern Counties Institution for the Deaf and Dumb.....	8
Nazareth Home.....	4
Salvation Army Home	1
	<hr/>
	61
	<hr/>

All these children were regularly supervised and kept under observation. 3 children died, all in Hospital.

Municipal Training Course for Health Visitors.

The sixth Training Course for Health Visitors commenced in September, 1935, and ended with the examination at the College of Medicine in April, 1936. Of the ten students enrolled eight qualified in April, one in July and one in December.

The seventh Training Course commenced with 16 students in October, 1936.

Welfare Centres.

The following table shows the geographical position of the Centres in the City, together with details of Centre days :—

CENTRE.	Ante-Natal Sessions.		Ante-Natal.		Post-Natal.		New Children.			Individuals.			Attendances.			Medical Sessions.		Illegitimate.	Individ- uals.	
	Individ- uals.	Attend- ances.	Individ- uals.	Attend- ances.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Number.	Average Attend'ce	Boys.	Girls.			
Benton	26	12	38	24	20	44	306	307	613	16	38.3	..	21	23		
Benwell	...	290	1089	39	121	45	308	404	421	825	4541	7359	11900	192	62.0	13	396	429		
Byker	...	388	1679	4	14	39	295	375	329	704	3424	4635	8059	188	42.9	24	366	338		
City	108	17	125	154	210	364	1678	3183	4861	94	51.7	8	184	180		
Cowgate	41	7	48	78	107	185	879	1072	1951	66	29.6	...	84	101		
Diana Street	...	212	807	2	2	46	273	354	374	728	4061	4693	8754	190	46.1	9	396	332		
Elswick	...	274	901	2	2	49	357	465	443	908	5132	5635	10767	192	56.1	32	452	456		
Fenham	...	135	569	1	1	17	236	315	234	549	3528	2250	5778	96	60.2	4	271	278		
Heaton	...	20	75	1	1	31	214	268	211	479	2768	2034	4802	96	50.2	8	245	234		
Scotswood	...	68	305	22	33	28	201	237	272	509	2275	3424	5699	110	51.8	11	264	245		
Shieldfield	211	26	237	340	375	715	3775	5856	9631	192	50.2	21	370	345		
Spital Tongues	64	12	76	99	73	172	978	587	1565	47	31.9	4	86	86		
St. Lawrence	...	40	200	2	2	38	328	463	449	912	5007	6255	11262	194	58.1	18	494	418		
Walker	...	231	585	...	...	23	238	361	366	727	3402	5127	8529	192	44.4	22	372	355
Walkergate	137	30	167	221	226	447	2291	2664	4955	98	50.6	7	233	214		
Wharncliffe Street	...	189	995	4	4	29	236	321	205	526	3437	2391	5828	98	59.5	25	268	258		
Total	...	1847	7205	77	180	449	3377	4479	4315	8794	47482	57472	104954	2061	50.9	206	4502	4292		

Attendances at Maternity and Child Welfare Centres.

(CHILDREN ONLY.)

YEAR.	No. of Attendances.	No. of Individuals.	Average Attendance per Individual.	Average Attendance at each Session.
1920.....	22,596	3,751	6.0	44.2
1921.....	32,538	4,734	6.8	40.7
1922.....	36,020	4,835	7.4	44.9
1923.....	42,515	5,153	8.2	46.5
1924.....	45,766	5,587	8.2	45.5
1925.....	45,476	5,744	7.9	43.6
1926.....	50,697	6,467	7.8	46.2
1927.....	46,672	6,522	7.1	42.4
1928.....	53,960	6,532	8.3	49.3
1929.....	52,460	6,574	7.9	48.2
1930.....	67,626	7,776	8.7	44.2
1931.....	83,561	8,927	9.4	43.1
1932.....	100,658	9,251	10.9	51.5
1933.....	99,103	8,955	11.1	50.9
1934.....	107,717	8,872	12.1	54.6
1935.....	104,174	8,952	11.6	52.2
1936.....	104,954	8,794	11.9	50.9

Dried Milk.

During the year 91,278 lb. cartons of dried milk were given gratis, and vouchers for 15,116 were given for cost price milk, the latter being distributed by the chemists as formerly. Approximately one-third of the children attending the Centres received free milk, and expectant mothers to the number of 469 also received it gratis.

The following table shows the quantity of dried milk distributed each month during the year 1936 :—

MONTH.	FREE.	AT COST PRICE.
	lbs.	lbs.
January.....	6,487	1,170
February.....	6,755	1,760
March.....	8,796	1,158
April.....	6,860	2,368
May.....	7,120	1,276
June.....	9,112	959
July.....	5,784	1,354
August.....	6,256	828
September.....	8,638	1,404
October.....	7,181	1,582
November.....	9,495	557
December.....	8,794	700
	91,278	15,116

Children attending Centres.....	8,794	
Children given free milk.....	3,603	
Percentage.....	41.0	
Expectant mothers given milk.....	469	
Free milk given to children (lbs.).....	88,346	} = 91,278
Free milk given to expectant mothers (lbs.).....	2,932	

NOTIFICATION OF BIRTHS ACTS.

Of the 5,709 live, and 371 still-births (gross) which were registered in the City in 1936, 5,395 or 88.7 per cent. were notified as follows :—

<i>Notified by.</i>	<i>Gross Living Births.</i>		<i>Gross Still Births.</i>
Medical Practitioners.....	267	....	14
Medical Practitioners and Midwives	328	....	19
Midwives	1,750	....	51
Princess Mary Maternity Hospital...	2,065	....	224
Newcastle General Hospital.....	351	....	30
Gables Maternity Home.....	285	....	9
Parents	5	....	....
	<hr/>		<hr/>
	5,051		344
	<hr/>		<hr/>

Still-Births.—Of the total net notifications of births received, 169 were of still-births, which gives a rate of 42.0 per 1,000 of net live and still-births.

Still-births Registered (net).....	190
Still-births Notified.....	169
Percentage Notified.....	88.9
Still-births Visited.....	172

<i>Duration of Pregnancy.</i>	<i>No.</i>	<i>Percentage to Total.</i>
At or under 7 months.....	13	7.6
At 7–8 months.....	61	35.5
At full time.....	98	56.9

Suggested causes of the still-births :—

	<i>Cases.</i>
(a) Ill-health of the mother.....	14
(b) Foetal deformities and malpresentations and uterine inertia.....	49
(c) Premature delivery, ante-partum hæmorrhage, etc.	20
(d) Other causes, including albuminuria and accidents	89

Syphilis was returned as the cause of death of two children below the age of 1 year.

Health Visiting.

With the exception of the so-called residential districts such as parts of Jesmond, every district in the City was visited regularly by members of the Health Visiting Staff.

For all purposes the Health Visiting Staff during the year 1936 made a grand total of 87,245 visits.

4,104 births were visited, and 21,094 re-visits were paid, an average of about 5 re-visits per child. These gave a total of 25,198 visits to children under 1 year.

SUMMARY OF VISITS.

	Primary.	Subsequent.	Total.
Births.....	4,104	21,094	25,198
Measles	3,625	4,251	7,876
Pneumonia	478	552	1,030
Diarrhœa	91	148	239
Children over 1 year.....	.....	.....	40,669
Hospital Cases.....	.....	.....	428
Expectant Mothers.....	.....	.....	1,438
Special Visits.....	.....	.....	1,093
Visits to Boarded-out or Nursed-out Children.....	.....	.....	596
Unsuccessful Visits (Onto and Removals) .....	.....	.....	7,308
Orthopædic Work .....	.....	.....	1,058
Tuberculosis Contacts .....	.....	.....	312
	.....	.....	87,245

Infants on Visiting List.

Of 4,285 children born in the City in 1935, 3,358 completed their first year in 1936 and of the remainder :

370 died,
261 left the City,
269 could not be traced,
27 were visited only once.

The following figures are therefore based on the 3,358 who completed the first year, *plus* the 370 who died, making in all a total of 3,728, and of that total 2,447, or 65.6 per cent., attended the Welfare Centres.

Of the number (2,447) attending the Centres 123 died, a rate of 50.3 per 1,000, as compared with 90 per 1,000 for the City.

Illnesses.—Among the children visited 287, or 7.7 per cent., contracted measles ; 72, or 1.9 per cent., contracted whooping cough ; 134, or 3.6 per cent., contracted diarrhœa ; 323, or 8.7 per cent., contracted bronchitis or pneumonia.

Details as to the stated **Feeding** of the 3,728 children under supervision during the year are given in the following table :—

	FEEDING.					
	BREAST.		MIXED.		ARTIFICIAL.	
	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.
At First Visit	3,284	88.1	121	3.2	323	8.7
Deaths in First Year of above Children	274	8.3	18	14.9	78	24.1
At time of Death	143	4.4	30	24.8	197	61.0
Surviving Children(3,358) at 9 months	1,278	38.1	280	8.3	1,800	53.6

Details as to children who should have attained the age of 5 years during 1936 :—

Well and attending school.....	2,821
Ill and not attending school	16
Left City or failed to trace.....	1,113
Died in 2nd year	88
Died in 3rd year	33
Died in 4th year	23
Died in 5th year	19
Total surviving.....	2,837
Total deaths.....	163
Total reported on.....	4,113

The addresses of 250 children who left the City were sent to the Medical Officers of Health for the districts to which they had gone.

Voluntary Workers.

As in other years the lady members of the Voluntary Association, under the presidency of Mrs. Leach, rendered valuable services, not only at the Centres, but also in the districts.

I am, Sir,

Your obedient servant,

A. F. G. SPINKS, M.D.,

Maternity and Child Welfare Medical Officer.

Maternity and Child Welfare Department,

10, Bigg Market,

Newcastle upon Tyne,

May, 1937.

MATERNITY AND NURSING HOMES.

REPORT OF THE BOARD OF INSPECTION.

1.—Introductory.

The Annual Inspection of the Maternity and Nursing Homes in the City, under the Nursing Homes Registration Act, 1927, has again been carried out by the Board specifically appointed for the purpose.

2.—Record of Inspection.

Nineteen homes in all were inspected, sixteen of these being homes which were inspected and reported upon in considerable detail last year. The three remaining homes comprised one which was not inspected last year owing to extensive alterations then in progress, and two homes which had applied for exemption from registration under sub-section 1, Section 6, of the Nursing Homes Registration Act. The position of these two homes is the subject of special reference in paragraph 4 of this report.

One home which was inspected and placed on the register last year has never been started as a nursing home, and it is recommended that the registration be withdrawn.

3.—Assessment of Nursing Homes.

In the report for the year 1935, an attempt was made to assess, in general terms, the efficiency of the nursing homes inspected, and to place them in the following categories :—

- (a) *Satisfactory*. These are nursing homes concerning which little or no criticism is offered. At most, certain minor additions to staff or equipment are necessary.
- (b) *Moderately Efficient*. These are nursing homes which are open to criticism on a number of points. They all require fairly considerable additions to the nursing or domestic staffs and/or, in some cases, additional equipment.
- (c) *Unsatisfactory*. These are homes which possess marked defects in staff, equipment and/or management.

Under this scheme of assessment, in 1935, only four homes were adjudged to be "satisfactory." Eight fell into the group of "moderately efficient," and four were classified as "unsatisfactory."

Using the same classification, as a result of the inspection for 1936, the findings were :—

Three of the four homes which were counted as "satisfactory" last year continue to hold their place, but one was not entirely satisfactory when visited this year and must be placed in the second category of "moderately efficient" homes. To this group must be added five homes which were ranked in the second group last year but have so far improved as to allow them to be classified as "satisfactory," and one home which was not inspected last year. In short, nine nursing homes in the City can now be counted as "satisfactory."

Eight homes were last year classed as "moderately efficient." Two remain in this category, and to these must be added the one already mentioned which has lapsed from the "satisfactory" list. Two others, which last year were considered to be definitely "unsatisfactory" have sufficiently improved to justify their inclusion in the second group, thus making a total of five homes ranking as "moderately efficient." One home, which was placed in this second group last year, could not be classified this year, owing to extensive alterations which were in progress.

Of the four homes classed as "unsatisfactory" last year one must still remain in this category. Two of the four, as has been stated, have improved sufficiently to be ranked as "moderately efficient," while the fourth was undergoing extensive alterations and could not be classified.

Of the 17 homes referred to in this paragraph the following is a summary of classification :—

Satisfactory	...	...	...	9
Moderately Efficient	...	...	...	5
Unsatisfactory	...	...	...	1
Unclassified	...	...	...	2
				—
				17
				==

4.—**Application for Exemption under Section 6 (Sub-Section I.) of the Nursing Homes Registration Act, 1927.**

Two homes have made application for exemption from inspection under Section 6 of the Nursing Homes Registration Act, 1927. This Section states :—

- “(1) A local supervising authority may grant exemption from the operation of this Act in respect of any hospital or institution not carried on for profit.
- (2) Any exemption granted under this section in respect of any hospital or institution shall continue in force for one year only from the date on which it is granted, but without prejudice to the power of the local supervising authority to grant any further exemption in respect of that hospital or institution.”

These two homes were inspected and found to be “moderately efficient.” On certain points both institutions fell short of the standard which has been laid down for nursing homes by the Health Committee. In one case it was evident that several of the wards were overcrowded and in both cases the number of the nursing staff was not entirely satisfactory. In addition to these major points, certain minor points were noted where improvements should be made.

5.—**Observations.**

It can be said that, as a result of the exhaustive survey made last year, there has been some improvement in the general conditions of the nursing homes in the City. This has been most marked in two respects, firstly, in the number and qualifications of the nursing staffs employed, and secondly, in the standard of accommodation provided both for the nursing and domestic staffs. While, however, there is evidence of this improvement there yet remains room for further advance along these lines, since in many cases both the number of the qualified staff, and the standard of accommodation provided for nursing and domestic staffs, fall considerably below what is now provided in up-to-date General Hospitals.

6.—**Recommendations.**

It is suggested that the findings and recommendations of the Board be communicated to the keepers of the homes which have

been classed as "satisfactory" and "moderately efficient," and that in the case of the home which has on both occasions been classed as "unsatisfactory," the keeper again be interviewed.

As regards the two homes applying for exemption under Section 6 of the Nursing Homes Registration Act, 1927, it is recommended that such exemption be granted, but conditional upon the rectification of the matters referred to in paragraph 4 above.

With regard to the nursing home which, though inspected and placed on the register last year, has never yet functioned as a nursing home, it is recommended that the registration be withdrawn.

E. F. DAWSON-WALKER,
Deputy Medical Officer of Health.

A. F. G. SPINKS,
Maternity and Child Welfare Medical Officer.

J. L. WATT,
Matron, City Hospital for Infectious Diseases.

*Health Department,
Town Hall,
Newcastle upon Tyne, 1.*

APPENDIX 1.

CITY AND COUNTY OF NEWCASTLE UPON TYNE.

NURSING HOMES REGISTRATION ACT, 1927.

LIST OF NURSING HOMES REGISTERED.

Ref. No.	Address.	Registered in the Name of
1.	26, Archbold Terrace	Miss M. M. Anderson
2.	10, Eslington Terrace	Miss M. Toyne
3.	1a, Clayton Road	Miss C. E. Balfour
4.	1, Park Terrace	Mr. R. J. Willan, F.R.C.S.
5.	5, Saville Place	Dr. H. Drummond
6.	4, Bentinck Terrace	Mrs. L. Newton
7.	10, Fernwood Road	Miss N. P. Hunter
8.	"The Minories," Jesmond Rd.	Mother Prioress
9.	"The Gables," Elswick Road.	The Matron
10.	24, Grosvenor Road	Miss Kirby and Miss Rooney
11.	6, Osborne Road	Miss M. H. Robertson
12.	"Elswick Lodge," Park Road	Chairman of Management Committee
13.	5, Osborne Terrace	Mrs. H. W. B. Gordon
14.	9, Windsor Terrace	Miss I. M. Middleton
15.	"Catherine House," 63, Osborne Road	Salvation Army
16.	"The Cheviot," Bowland Lodge, Western Avenue	Mrs. M. I. Behn
17.	10, Collingwood Terrace	Miss E. M. Myers
18.	"Cairney House," 10, Osborne Villas	Mr. J. Gilmour, F.R.C.S.
19.	Walker Accident Hospital, Airey Terrace, Walker	The Honorary Secretary
20.	*Northern Women's Hospital, 1a, Osborne Avenue	The Honorary Secretary

* Exempted from Registration under Section 6 of the Act.

INCLUDING REPORTS OF THE
DEPUTY MEDICAL SUPERINTENDENT OF THE
INFECTIOUS DISEASES HOSPITAL
AND THE BACTERIOLOGIST.

III.—INFECTIOUS DISEASE.

FEVERS, FOOD POISONING,
CITY HOSPITALS FOR INFECTIOUS DISEASES,
DISINFECTION, BACTERIOLOGY.

DEATHS (CORRECTED) FROM NOTIFIABLE INFECTIOUS DISEASES
AND NON-NOTIFIABLE ZYMOTIC DISEASES.

WARD.	Diph- theria.	Ery- sipelas.	Scarlet Fever.	Enteric Fever.	Pneu- monia.	Cere- bro- Spinal Fever.	Enceph- alitis Lethar- gica.	Polio- encepha- litis.	Measles, and Rubella.	Puer- peral Fever.	Small- pox.	Whoop- ing Cough.	Diarr- hoea (under 2 years of age).	Dysen- tery.	Tuber- culosis, All forms.
St. Nicholas .....	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...
St. Thomas'	2	...	...	...	4	...	...	...	...	...	...	...	7	...	5
St. John's	2	...	...	...	21	...	...	...	1	...	...	1	6	...	11
Stephenson	3	1	1	...	17	1	...	...	1	1	...	...	13	...	27
Armstrong	1	...	...	...	23	1	1	...	1	...	...	1	11	...	12
Elswick .....	...	...	...	...	22	...	...	...	...	2	...	...	5	...	17
Westgate	2	1	...	...	11	1	...	...	1	...	...	1	6	...	12
Arthur's Hill .....	...	...	...	...	5	...	...	...	...	1	...	...	2	...	8
Benwell.....	9	1	1	...	24	...	1	...	2	1	...	1	9	...	22
Fenham	6	...	1	...	21	...	1	...	1	1	...	...	10	...	26
All Saints' .....	...	1	...	...	16	...	1	...	...	...	...	...	6	...	19
St. Andrew's	1	1	...	...	5	1	1	...	4	...	...	...	4	...	13
Jesmond .....	...	...	1	...	9	...	...	...	...	1	...	2	...	...	2
Dene	1	...	1	...	9	...	...	...	...	...	...	...	2	...	19
Heaton .....	...	1	...	...	4	...	...	...	...	...	...	...	...	1	16
Byker	2	...	...	...	11	...	...	...	...	...	...	...	2	...	6
St. Lawrence.....	1	2	2	1	13	...	1	...	...	1	...	...	4	1	13
St. Anthony's ..	3	4	1	1	16	...	1	...	2	...	...	1	9	...	48
Walker	2	...	...	...	24	1	2	...	...	2	...	...	9	...	32
CITY	35	12	8	2	256	7	10	...	17	10	...	7	105	2	308

NOTE :—All deaths in Public Institutions have been allotted to the Wards to which they properly belong.

NOTIFIED CASES OF INFECTIOUS DISEASE AND DEATHS (GROSS).

EXCLUSIVE OF TUBERCULOSIS.

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED AND DEATHS REGISTERED DURING THE YEAR 1936.

NOTIFIABLE DISEASE.	AT AGES—YEARS.														GROSS TOTAL.		NET TOTAL.		Cases admitted to Hospital (gross).				
	Under 1.		1 to 5.		5 to 15.		15 to 25.		25 to 45.		45 to 65.		65 and up-wards.		Ages not known.		1936.			1935.		1936.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.		Cases.*	Deaths.	Cases.	Deaths.
Diphtheria (including Membranous Croup)	7	4	110	22	476	16	57	1	49	3	6	1	24	6	...	705	43	688	44	693	35	679	
Erysipelas	7	6	4	...	9	...	13	...	67	...	69	...	...	...	...	193	16	257	20	176	12	87
Scarlet Fever.....	4	1	227	7	582	2	94	...	46	1	2	...	...	...	...	955	11	1304	6	937	8	968
Enteric Fever .....	...	...	...	...	...	...	5	2	3	1	...	1	...	...	...	8	3	7	...	8	2	31
Cerebro-Spinal Fever	5	3	1	5	3	4	...	3	1	...	...	1	...	...	...	10	16	19	17	8	7	32
Acute Poliomyelitis	1	...	1	...	2	...	1	...	...	...	...	...	...	...	...	5	...	10	...	3	...	1
Acute Polioencephalitis ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	...	...	...
Encephalitis Lethargica ..	...	...	...	...	...	...	...	3	...	4	...	3	...	...	...	...	10	...	...	...	10	2
Puerperal Fever .....	...	...	...	...	...	...	10	7	25	36	...	...	...	...	...	35	43	60	37	9	10	...
Puerperal Pyrexia .....	...	...	...	...	...	...	38	...	57	...	...	...	...	...	...	95	...	117	...	19	...	2
Ophthalmia Neonatorum ..	54	...	...	...	...	...	...	...	...	...	...	...	...	...	...	54	...	62	...	51	...	6
Pneumonia	50	73	155	39	110	10	50	11	85	32	84	81	35	63	...	573	309	734	331	546	256	138	
Malaria .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery	5	2	20	...	7	1	3	...	5	1	...	...	...	...	...	41	4	83	10	34	2	74
† Measles and Rubella	300	8	2341	11	1363	...	20	1	3	...	2	...	...	...	...	4034	20	3346	20	4022	17	95
‡ Chickenpox	36	...	285	...	796	...	22	...	4	...	1	...	...	...	...	1144	...	1897	...	1144	...	3
	469	97	3144	84	3348	33	313	28	345	78	165	86	59	69	...	7852	475	8587	490	7650	359	2118	

* Cases from outside the City excluded for the purpose of calculating NET Death Rates.

† Ministry of Health Regulations, 1920.

‡ Temporarily notifiable.

WARD DISTRIBUTION OF INFECTIOUS DISEASES (NET).

WARD.	Diphtheria.	Erysipelas.	Enteric Fever.	Scarlet Fever.	Cerebro-Spinal Fever.	Poliomyelitis.	Acute Polio-encephalitis.	Encephalitis Lethargica.	Measles.	Rubella.	Puerperal Fever.	Puerperal Pyrexia.	Ophthalmia Neonatorum.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Smallpox.	Chickenpox.	Malaria.	Dysentery.	Tuberculosis (all forms).	Total.	
St. Nicholas' .....	...	1	...	...	...	...	...	...	2	...	...	...	...	3	...	...	...	...	...	...	1	7
*St. Thomas.....	36	7	1	45	...	...	...	...	130	6	...	...	1	14	2	...	72	...	...	...	19	333
St. John's	27	3	...	12	...	1	...	...	132	1	...	1	5	37	3	...	57	...	...	1	16	296
Stephenson	56	12	...	17	...	...	...	...	196	...	1	...	5	28	1	...	73	...	...	1	41	431
Armstrong	33	10	...	55	1	...	...	...	199	5	...	...	1	37	5	...	37	...	...	1	21	405
Elswick	45	9	...	33	...	...	...	...	112	3	2	...	4	23	1	...	53	...	...	4	34	323
Westgate	42	5	...	32	1	...	...	...	100	6	...	...	...	41	2	...	36	...	...	...	23	288
† Arthur's Hill	13	17	...	21	2	1	...	...	33	3	1	2	2	5	1	...	44	...	...	7	11	163
Benwell.....	123	23	1	84	...	...	...	...	365	10	1	1	5	43	4	...	97	...	...	2	51	810
Fenham	95	18	1	123	1	...	...	...	291	13	2	1	3	39	5	...	158	...	...	...	50	800
All Saints'	7	5	...	29	...	...	...	...	266	6	1	8	9	28	...	...	31	...	...	...	26	416
St. Andrew's	10	4	...	15	...	...	...	...	117	2	...	...	1	21	1	...	12	...	...	1	22	206
Jesmond	7	4	...	33	...	...	...	...	72	1	...	...	2	8	1	...	14	...	...	1	7	150
Dene	13	6	...	81	...	1	...	...	241	7	...	...	2	14	3	...	69	...	...	2	22	461
Heaton	9	4	1	37	...	...	...	...	159	5	...	...	...	9	1	...	58	...	...	...	33	316
Byker	12	6	...	35	1	...	...	...	279	7	...	...	...	17	2	...	52	...	...	...	34	447
St. Lawrence.....	23	8	2	53	1	...	...	...	338	11	...	2	1	16	2	...	77	...	...	5	37	575
St. Anthony's	67	14	2	122	...	...	...	...	523	6	...	2	2	48	2	...	124	...	...	4	70	986
† Walker	75	20	...	110	1	...	...	...	370	5	1	1	8	76	3	...	80	...	...	5	66	821
CITY	693	176	8	937	8	3	...	...	3925	97	9	19	51	507	39	...	1144	...	...	34	584	8234

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children.
† " Elswick Grange and Newcastle General Hospital.
‡ " City Hospital for Infectious Diseases, Walker Gate.

HOUSEHOLDS AFFECTED WITH INFECTIOUS DISEASES
EXCLUSIVE OF TUBERCULOSIS, MEASLES AND CHICKENPOX.

DISEASES.	HOUSEHOLDS WITH						Mili- tary or Naval Cases.	Insti- tutions. *	TOTAL CASES (Gross).	Cases. from outside of City.	NET CASES.
	Single Cases.	2 Cases each.	3 Cases each.	4 Cases each.	5 Cases each.	6 Cases and over					
Diphtheria (including Membranous Croup) ..	550	40	8	2	1	...	...	38	705	12	693
Erysipelas.....	149	...	...	...	...	...	...	44	193	17	176
Scarlet Fever	723	68	8	3	1	...	...	55	955	18	937
Enteric (or Typhoid Fever)	7	...	...	...	...	...	...	1	8	...	8
Cerebro-Spinal Fever	6	...	...	...	...	...	...	4	10	2	8
Poliomyelitis	2	...	...	...	...	...	...	3	5	2	3
Encephalitis Lethargica ..	...	...	...	...	...	...	...	...	...	...	...
Polioencephalitis .....	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	6	...	...	...	...	...	...	29	35	26	9
Puerperal Pyrexia	10	...	...	...	...	...	...	85	95	76	19
Ophthalmia Neonatorum..	43	...	...	...	...	...	...	11	54	3	51
Pneumonia	533	5	1	...	...	...	...	27	573	27	546
Malaria .....	...	...	...	...	...	...	...	...	...	...	...
Dysentery.....	20	1	...	...	...	...	...	19	41	7	34
TOTAL	2,049	114	17	5	2	...	...	316	2,674	190	2,484

* See next page.

INFECTIOUS DISEASES.

Schools and Infectious Disease.—It was not found necessary to close any school on account of infectious disease during the year.

PUBLIC INSTITUTIONS AND INFECTIOUS DISEASE.

The following notifications were received during the year:—

INSTITUTIONS, &c.	Diphtheria.	Erysipelas.	Scarlet Fever.	Enteric Fever.	Encephalitis Lethargica.	Measles and Rubella.	Puerperal Fever.	Puerperal Pyrexia.	Pneumonia.	Chickenpox.	Ophthalmia Neonatorum.	Poliomylitis.	Polio- encephalitis.	Cerebro-Spinal Fever.	Smallpox.	Malaria.	Dysentery.	Total.
Royal Victoria Infirmary	2	15	20	...	...	8	...	...	24	...	...	1	...	...	...	...	2	72
Fleming Memorial Hospital	16	4	17	1	...	5	...	...	1	...	...	1	...	2	...	...	5	52
Newcastle General Hospital	3	15	7	...	...	...	2	2	...	3	2	1	...	2	...	...	11	48
City Hospital for Infectious Diseases	1	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4
Princess Mary Maternity Hospital .....	...	1	...	...	...	...	26	83	1	...	8	...	...	...	...	...	...	119
Military Barracks	1	...	...	...	...	1	...	...	...	15	...	...	...	...	...	...	...	17
Eye Infirmary .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
National Children's Home	7	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	10
Throat, Nose and Ear Hospital	1	4	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	6
Common Lodging Houses .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Royal Victoria School for the Blind .....	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	6
Babies' Hospital, West Parade	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Northern Counties Orphanage..	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Gables Maternity Home .....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Nursing Homes	1	2	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	5
Hostels, etc.	5	1	4	...	...	2	...	...	...	...	...	...	...	...	...	...	...	12
TOTAL	38	44	55	1	...	20	29	85	27	21	11	3	...	4	...	...	19	357*

* Does not include any cases belonging to the City which could properly be assigned to their homes.

SCARLET FEVER.

Notifications of 937 cases were received during the year, and there were 8 deaths, equivalent to a case mortality of 0.8 per cent.

DIPHTHERIA.

693 cases were notified during the year, and 35 died, a case mortality of 5.1 per cent., as compared with 5.2 in 1935.

MEASLES AND RUBELLA.

4,022 cases (including 97 of rubella) were notified, and there were 17 deaths (net) in 1936, representing a death rate of 0.06 per 1,000 population, as compared with 0.06 in 1935, and a case mortality of 0.4 per cent. of notified cases (net).

The following table shows the deaths in the various wards, and at different age periods :—

WARD.	Under 3 months.	3 and under 6 months.	6 and under 9 months.	9 and under 12 months.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	5 and under 10 years.	Over 10 years.	TOTALS.
St. Nicholas'
St. Thomas'
St. John's	1	...	...	...	...	...	1
Stephenson	1	...	...	...	...	...	...	1
Armstrong	1	...	...	...	...	...	...	...	...	1
Elswick
Westgate	1	...	...	1
Arthur's Hill	1	...	...	1
Benwell	1	...	...	...	...	...	...	...	...	1
Fenham	1	...	...	1
All Saints'
St. Andrew's	2	1	1	...	...	...	4
Jesmond
Dene
Heaton
Byker
St. Lawrence	1	...	1	...	...	1	...	1	...	...	4
St. Anthony's	1	...	...	...	1	...	...	...	...	...	2
Walker
TOTAL	2	2	1	1	4	2	1	4	...	...	17

Each Health Visitor visited and re-visited selected cases occurring in her district. By this arrangement each case is seen immediately on receipt of the notification, and advice is given regarding the nursing and isolation of the patient. The cases are kept under supervision until they recover, and should subsequent cases occur in the family they are recorded.

Measles Cases, including Rubella, notified during 1936.

Cases notified by Medical Practitioners	3,347
Cases found by Health Visitors	668
Cases notified by Parents and others	16
Cases found from Returns of Deaths.....	3
	<hr/>
	4,034 gross.
Less 12 cases from outside the City :—	4,022 net.
	<hr/>

Of the total number of measles cases notified, 3,625 in 2,916 households (or 89.9 per cent.) were visited by the Health Visitors, and 4,251 revisits were paid, a total of 7,876 visits.

The following particulars refer to the cases visited :—

	DWELLINGS OF					Total houses visited.
	1 room	2 rooms	3 rooms	4 rooms	More than 4 rooms	
Families	170	890	969	736	151	2,916
Children	333	2,050	2,237	1,923	349	6,892
Cases	203	1,147	1,203	897	175	3,625
Percentage of Cases to						
Children	61.0	56.0	53.8	46.6	50.1	52.6
Cases developing Pneumonia	10	24	24	18	1	77
Percentage of Cases develop-						
ing Pneumonia	4.9	2.1	2.0	2.0	0.6	2.1
Deaths from Measles	7	2	3	5	....	17
Cases, notified Measles,						
Deaths certified Pneumonia..	1	2	....	....	....	3
Case Mortality per cent.	3.9	0.3	0.2	0.6	....	0.6

Total unvisited cases 409, including 389 better-class houses in which no deaths occurred, and 19 in institutions, with 3 deaths.

Medical Attendance.—In 97.9 per cent. of the cases visited a doctor was in attendance.

Condition of Patient.—In 89.8 per cent. of the cases visited the disease ran a normal course, but bronchitis, pneumonia or other complications developed in the remainder.

Attendance at Schools.—1,101, or 30.4 per cent., of the affected children had previously attended school, and 2,524, or 69.6 per cent., had never attended school. In connection with 1,298 of the latter cases, however, other children in the infected houses were scholars, equivalent to 35.8 per cent. of the total cases.

The following were the ages of visited children who were suffering from measles :—

Under 1 year	290
1-2 years	501
2-3 years	537
3-4 years	594
4-5 years	594
5-6 years	718
Over 6 years	391
	<u>3,625</u>

WHOOPING COUGH.

7 deaths occurred from whooping cough. The particulars are as follows :—

WARD.	YEARS OF AGE.						Total.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	
St. Nicholas' .....	....	....	....	....	....	....	....
St. Thomas' .....	....	....	....	....	....	....	....
St. John's	1	....	....	....	....	....	1
Stephenson .....	....	....	....	....	....	....	....
Armstrong	1	....	....	....	....	....	1
Elswick .....	....	....	....	....	....	....	....
Westgate .....	....	....	1	....	....	....	1
Arthur's Hill .....	....	....	....	....	....	....	....
Benwell	1	....	....	....	....	....	1
Fenham .....	....	....	....	....	....	....	....
All Saints' .....	....	....	....	....	....	....	....
St. Andrew's .....	....	....	....	....	....	....	....
Jesmond	1	1	....	....	....	....	2
Dene .....	....	....	....	....	....	....	....
Heaton .....	....	....	....	....	....	....	....
Byker .....	....	....	....	....	....	....	....
St. Lawrence .....	....	....	....	....	....	....	....
St. Anthony's .....	....	1	....	....	....	....	1
Walker.....	....	....	....	....	....	....	....
CITY.....	4	2	1	....	....	....	7

The death rate in 1936 was equivalent to 0.02 per 1,000 population, as compared with 0.08 in 1935.

FOOD POISONING.

Eleven cases of illness due to organisms of the food poisoning group were notified during the year. Two of these, a man and his wife, were found to have been infected with the para typhoid C. bacillus.

The history was that they had attended a garden party held in a village in the County of Durham, where they had eaten some salmon sandwiches. A number of other persons who also partook of these sandwiches were taken ill, and were found to have been infected with this organism.

The remaining nine cases were due to infection with the bacillus *æertrycke*.

Six were notified from the Fleming Memorial Hospital, three being Newcastle cases and three extra mural cases.

Two were notified from the Newcastle General Hospital, and one from the Royal Victoria Infirmary, the latter being a Newcastle case. All of these cases were transferred to the City Hospital, with the exception of one extra mural case, which died at the Fleming Memorial Hospital.

One case died in the City Hospital. No source of infection was traced in these nine cases.

ENTERIC GROUP OF FEVERS

During the year 1936, 15 cases of the enteric group of infections were brought to notice. The distribution of these cases, according to the months in which they were notified, the type of infection (typhoid or para-typhoid), and their place of origin, is recorded in the following table :—

Distribution of Enteric Group Infections for 1936.*

	EXTRA-MURAL.		NEWCASTLE.	
	Typhoid.	Para-typhoid B.	Typhoid.	Para-typhoid B.
January .....	....	1	....	....
February .....	....	....	....	....
March .....	....	....	1	1
April .....	....	....	....	....
May .....	....	....	....	....
June .....	....	1	....	....
July .....	....	1	....	1
August	1	....	1	....
September .....	....	....	2 (2)	....
October .....	....	....	1	....
November	1	1	....	....
December	1	....	1	....
Totals.....	3	4 ,	6 (2)	2

Figures in parentheses indicate deaths.

It will be seen that seven patients came from without the City's boundaries, the remaining eight being Newcastle cases proper. Of the seven extra mural cases, four were notified from the Royal Victoria Infirmary, two from the Fleming Memorial Hospital, and one from a Nursing Home in the City. All these cases were admitted to the City Hospital, at the request of the Local Authority concerned.

The eight City cases, which were all admitted to hospital, were made up of 6 cases of typhoid and two para typhoid B. infections. Two of the typhoid cases proved fatal. The cases were all of the sporadic type, and no connection could be traced between them.

In all there were 25 admissions to the City Hospital. Apart from the 15 patients mentioned above, these cases were all notified in the areas of neighbouring Local Authorities, and were admitted to the City Hospital at the request of the Local Authority concerned. Seven of these cases were suffering from typhoid fever, one having been infected in the Bournemouth epidemic which occurred during the summer. Another was a chronic carrier of the disease who was sent in for special investigation, in order to see whether it was possible to eradicate the infection.

The remaining five cases, four of whom were members of the same family, were infected in a localised outbreak which occurred in a mining village in Northumberland. The remaining three cases were para typhoid B. infections.

Among the 25 cases admitted to hospital, there were four deaths, all due to typhoid infection, equivalent to a case mortality of 16 per cent.

In six cases anti-typhoid serum, introduced by Felix & Pitt, was given, three of these cases proving fatal.

DIARRHOEA.

There were in all 126 deaths from the disease, equal to a death rate of 0.43 per 1,000 population, and this number included 105 deaths of children under two years of age.

SMALLPOX.

No case of this disease occurred in the City during the year.

The following are the particulars of **Vaccination** during the last thirty-two years :—

Year.	Births Registered	Successful Vaccinations	Unsuccessful Vaccinations	Exemption Certificates.		Deaths, Removals and Post-ponements
				Number.	Percentage to Total Births.	
1905	7,958	7,264	27	65	0.8	....
1906	7,721	6,733	28	92	1.2	....
1907	7,610	6,702	16	94	1.2	....
*1908-12	35,265	27,240	114	3,398	9.6	....
1913-17	34,296	21,251	33	7,144	20.8	....
1918-22	34,372	19,011	95	9,262	26.9	....
1923-27	31,290	19,658	30	5,542	17.7	....
1928	5,780	4,320	19	912	15.8	....
1929	5,638	3,555	33	1,092	19.4	....
†1930	†6,195	3,897	31	1,264	20.4	1,003
1931	6,059	3,754	39	1,343	22.2	923
1932	6,009	3,600	27	1,395	23.2	889
1933	5,770	3,479	18	1,377	23.9	809
1934	5,890	3,467	27	1,449	24.6	874
1935	5,899	3,474	32	1,401	23.7	901
§1936	5,713	2,798	26	1,305	22.8	....

* Vaccination Act, 1907, came into force.

† Walker District included.

‡ Supervision of Vaccination transferred from Guardians to Health Committee on 1st April, 1930.

§ Provisional figures only.

CHICKENPOX.

1,144 cases were notified. There were no deaths.

ERYSIPELAS.

176 cases of this disease were notified and there were 12 deaths.

PUERPERAL SEPTICÆMIA AND PUERPERAL PYREXIA.

28 cases were notified, with 10 deaths. Inquiries were made concerning 26 of these.

INFLUENZA AND PNEUMONIA.

These diseases accounted for 294 deaths as against 327 last year.

Total deaths at age periods.

Under 5 years.	5-15.	15-25.	25-45.	45-65.	65 and over.	Total.
84	6	13	34	85	72	294

As will be seen from the above figures, 84, or 28.6 per cent., of the deaths occurred below the age of 5 years.

546 cases of pneumonia, including influenzal-pneumonia, were notified. For the ages and ward distribution, see pages 72 and 73.

Of that number 478, or 87.5 per cent., were visited by Health Visitors. It was found that 325, or 68.0 per cent., were primary pneumonia, 54, or 11.3 per cent., were cases of influenzal-pneumonia, and 99, or 20.7 per cent., were cases of pneumonia following other diseases.

Sex.—60.3 per cent. of the cases were males.

Ages.—The ages of the 478 cases visited were as follows :—

Under 1 year	45
1-5 years	145
5-15 years	99
15-25 years	46
25-45 years	59
45-65 years	62
and over 65 years	22
	<hr/>
	478
	<hr/>

Housing.—24 cases occurred in 1 roomed dwellings, 144 cases occurred in 2 roomed dwellings, 146 cases occurred in 3 roomed dwellings, and 164 cases occurred in more than 3 roomed dwellings.

Type of House.—194 cases occurred in flats, 154 cases in tenements, and 130 in self-contained houses.

Previous History.—

There was a previous history of	Measles	in 207 cases.
„ „ „	Whooping Cough	in 149 cases.
„ „ „	Influenza	in 94 cases.
„ „ „	Frequent winter	
	Coughs and Colds	in 376 cases.
„ „ „	Pneumonia	in 134 cases.
„ „ „	Tuberculosis	in 9 cases.

Hospital Treatment.—140 cases of pneumonia were treated in the Infectious Diseases Hospital. The majority of these were from houses where there was over-crowding or other unsuitable home conditions. 34 of these patients died, giving a case mortality of 24.4 per cent.

Deaths.—104, or 21.8 per cent., of the visited cases of pneumonia died.

ENCEPHALITIS LETHARGICA.

One case of encephalitis lethargica was admitted to the City Hospital during the year.

ACUTE POLIOMYELITIS.

One proved case of poliomyelitis was admitted to the City Hospital during the year, and was later transferred to the Newcastle General Hospital.

CEREBRO-SPINAL MENINGITIS.

During the last three years the incidence of cerebro-spinal fever, which for some years previous to 1932 had been steadily increasing, has somewhat declined, and during 1936 17 cases were notified in Newcastle. The figures for 1934 and 1935 were 31 and 27. Twenty-six cases of this disease were nursed in the City Hospital during the year. Eight of these were Newcastle cases, while the remainder were admitted either direct, or through one of the hospitals in the City, from surrounding areas.

There were 10 deaths among these 26 cases, equivalent to a case mortality rate of 38.4 per cent. The corresponding figures for 1934 and 1935 were 52.9 per cent. and 44.4 per cent.

The distribution of these cases, according to the months in which they were admitted, and their places of origin, is recorded in the following table :—

	Newcastle.	Extra-Mural.	Totals.
January	2 (1)	1 (1)	3 (2)
February	1	2	3
March .....	....	2 (1)	2 (1)
April	1	2 (1)	3 (1)
May	1 (1)	1	2 (1)
June .....	....	2	2
July	1 (1)	1	2 (1)
August	1	1 (1)	2 (1)
September .....	....	....	....
October .....	....	1 (1)	1 (1)
November	1	2 (1)	3 (1)
December .....	....	3 (1)	3 (1)
Totals	8 (3)	18 (7)	26 (10)

The figures in parentheses, which are included in the numbers alongside which they stand, indicate fatal cases.

The circumstances of all the Newcastle cases have been carefully investigated, but in no case has it been possible to trace the source of the infection.

More than two-thirds of the cases of cerebro-spinal fever admitted to hospital came from extra-mural authorities in the neighbourhood, and wherever possible, it has been the policy of the Health Department to give assistance to authorities whose hospital accommodation is of such a character as to prevent them from giving adequate treatment to patients suffering from this extremely dangerous disease. The following table shows the age and sex distribution of the 26 cases admitted to hospital :—

Ages.	0-1.	1-2.	2-5.	5-15.	15-25.	25-45.	45 and up-wards.	Totals.
Male	3 (1)	2 (1)	3 (3)	5 (2)	7	1	....	21 (7)
Female	1	....	....	2 (2)	1	....	1 (1)	5 (3)
Totals.....	4 (1)	2 (1)	3 (3)	7 (4)	8	1	1 (1)	26 (10)

Figures in parentheses indicate deaths.

It will be noted that the mortality rate is particularly high under the age of 5, and that young persons and adults from 15 to 25 have the best chance of recovery from the disease.

BACILLARY DYSENTERY.

Bacillary dysentery has been prevalent in the City since 1928, and during the past year 94 cases were notified. In 53 of these cases the diagnosis was confirmed bacteriologically, six of these being extra-mural cases, which had been admitted to one of the City's hospitals suffering from the disease.

Forty-six proved cases of bacillary dysentery were admitted to the City Hospital. Among these cases there were six deaths.

During the year 17 cases were notified from the Newcastle General Hospital. There was one outbreak in this Institution, which occurred in the autumn. During the month of October ten cases were notified, four being due to the Sonne organism, and six to the Flexner type. The remainder were sporadic cases.

Nine cases occurred in the Fleming Memorial Hospital during the year, all being of the sporadic type. Of the total nine cases, five were due to the Sonne organism, three to the Flexner organism, and one to the Newcastle type. There were two deaths in the Sonne group, and one in the Flexner group. Three of the cases were extra mural in origin.

Five cases were notified from the Royal Victoria Infirmary during the year.

There was one outbreak which occurred in the City Hospital on a diphtheria ward. It was caused by the Flexner type of organism, and was due to careless nursing.

The circumstances and history of all cases were carefully investigated with a view to obtaining information as to the probable sources of infection. The age, sex, and mortality incidence of the series of 53 cases are given in the following table :—

Ages.	0-1.	1-2.	2-5.	5-15.	15-25.	25-45.	45 and up-wards.	Total.
Males.....	2 (1)	6	6	9 (1)	3	4	1	31 (2)
Females	3 (2)	5 (2)	7	5	1 (1)	1		22 (5)
Total	5 (3)	11 (2)	13	14 (1)	4 (1)	5	1	53 (7)

The figures in parentheses indicate fatal cases.

The distribution of these organisms among the cases is as follows :—

	FLEXNER.					Sonne Bacil- lus.	Newcastle	Atypical	Not Typed	Totals.
	W.	X.	Y.	Z.	XZ.					
Total No. of Cases	1	5	1	11	3	22	7	1	2	53
Fatal Cases .....	....	....	1	1	....	3	1	....	1	7
Non-Fatal Cases	1	5	....	10	3	19	6	1	1	46

VENEREAL DISEASES.

Syphilis was certified as the cause of death in 27 cases.

The work of the treatment clinic has been continued successfully. 1,451 old and new cases attended 23,807 times as out-patients. 10 cases accounted for 149 in-patient days. Of the 769 new cases, 132 were syphilis, 410 gonorrhœa, 3 soft chancre, and 224 were conditions other than venereal. 68 per cent. were males.

2,555 doses of salvarsan substitutes, 3,431 doses of mercury and 1,085 doses of bisoxyl were administered to out-patients and in-patients.

1,170 Wasserman reactions were carried out by the College of Medicine, and 1,350 microscopical examinations of pathological material were made at the treatment clinic. The irrigation stations for males and for females in connection with the clinic have been in full use during the year.

56 medical practitioners in the City are qualified to receive free supplies of arseno-benzol compounds. 15 made application for these supplies during the year and 847 doses were given.

Newcastle Residents Notified as Attending other Centres.

Cases.—Syphilis, 2; gonorrhœa, 7; conditions other than venereal, 7.

Attendances.—362.

Doses of salvarsan substitute given to out-patients and in-patients, 53.

In-patients.—In-patient days, 84.

Information as to ophthalmia neonatorum will be found in Section II. (The Child).

CITY HOSPITALS FOR INFECTIOUS DISEASES.

Report of the Deputy Medical Superintendent.

Accommodation.

NAMES AND SITUATION OF HOSPITALS.	TOTAL AVAILABLE BEDS.
City Hospital for Infectious Diseases, Walker Gate— Fever Pavilions 232 (One of 30 beds temporarily appropriated for Tuberculosis) Tuberculosis Pavilions 106 Smallpox and Isolation Hospitals, Town Moor	338 172

City Hospital, Walker Gate.

YEAR.	Population of the City.	Number of Beds at Hospital for Fever Cases.	Total Admissions (exclusive of Pulmonary Tuberculosis and Smallpox).	Percentage of Scarlet Fever, Diphtheria and Enteric Fever Cases Admitted to Cases Notified.
1890	182,866	104	219	21.3
1900	213,039	104	290	38.6
1910	265,077	172	912	83.0
1920	286,061	232	1,710	86.4
1921	278,400	232	1,683	82.4
1922	281,600	232	1,032	86.3
1923	283,800	232	991	92.6
1924	285,900	232	1,502	90.5
1925	286,300	*232	1,711	86.4
1926	284,700	*232	1,397	89.1
1927	288,500	*232	1,493	89.7
1928	281,500	*232	1,294	92.9
1929	283,400	*232	1,713	89.1
1930	283,400	*232	1,649	96.4
1931	283,600	*232	2,347	95.6
1932	285,100	*232	2,143	96.4
1933	286,500	*232	3,040	96.3
1934	287,050	*232	3,292	95.3
1935	292,700	*232	2,881	97.2
1936	290,400	*232	2,471	97.0

* 30 of these beds temporarily appropriated for Tuberculosis patients.

CITY HOSPITAL, WALKER GATE.

(Fever Pavilions.)

Admissions during the year—2,471.

The *average daily number* of patients in the hospital was 213, exclusive of 98 cases of Tuberculosis.

RATE PER CENT. OF CASES REMOVED TO HOSPITAL TO CASES NOTIFIED.

	1890	1895	1900	1905	1910	1915	1920	1925	1930	1931	1932	1933	1934	1935	1936
Scarlet Fever	18.4	33.0	35.0	50.1	84.5	91.3	85.7	85.0	95.9	95.2	96.3	96.1	94.5	96.3	96.0
Diphtheria	8.3	28.7	40.0	36.8	80.1	89.1	89.1	94.1	97.5	99.1	96.3	100.0	98.2	98.7	98.4
Enteric Fever.....	38.9	48.0	54.5	52.0	90.5	87.0	90.0	96.4	97.6	92.3	100.0	100.0	100.0	100.0	100.0
All cases of the above, } together with Con- } tinued and Typhus } Fever and Cerebro- } Spinal Fever, etc.	21.3	34.6	38.6	47.8	83.0	90.5	86.4	86.0	96.1	95.6	96.3	96.0	95.0	96.9	96.7

CITY HOSPITAL FOR INFECTIOUS DISEASES,
WALKER GATE.

88A

Diseases Admitted—1936.

		PROVED TO BE :—																										
SENT IN AS	Number.	Scarlet Fever.	Diphtheria.	Diphtheria Carriers.	Enteric Group of Fevers.	Dysentery.	Measles.	Rubella.	Varicella.	Mumps.	Pertussis.	Epidemic Cerebro-Spinal Meningitis.	Other forms of Meningitis.	Poliomyelitis.	Encephalitis Lethargica.	Pneumonia.	Bronchitis.	Influenza.	Other Respiratory Diseases.	Erysipelas.	Skin and Septic Conditions.	Puerperal Pyrexia.	Tonsillitis.	Gastro-Intestinal Diseases.	Ophthalmia Neonatorum.	General Diseases.	Injuries.	Unclassified.
Scarlet Fever	968	915	2	...	...	...	3	6	...	...	...	...	...	...	...	4	2	...	...	...	3	...	9	1	...	...	...	23
Diphtheria	679	12	526	...	1	...	5	...	...	...	...	...	...	...	...	1	...	...	12	...	1	...	101	6	...	...	...	14
Diphtheria Carriers	222	...	1	220	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Enteric Group of Fevers....	31	...	...	...	23	2	...	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	1	...	...	...	2
Dysentery.....	74	...	...	...	1	44	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	25	...	...	...	2
Measles	93	2	1	...	...	...	87	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1
Rubella	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Varicella	3	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Mumps	3	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Anthrax	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Pertussis	8	...	...	...	...	...	...	...	...	...	5	...	...	...	...	1	1	...	...	...	...	...	...	1	...	...	...	...
Epidemic Cerebro-Spinal Meningitis.....	32	...	...	...	...	...	...	...	...	...	...	23	5	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2
Other forms of Meningitis	21	...	...	...	...	...	1	...	...	...	...	2	9	...	...	5	1	1	...	...	...	...	...	1	...	...	...	1
Poliomyelitis	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Pneumonia	138	...	...	...	...	...	1	...	...	...	2	1	...	...	...	121	5	...	5	...	...	...	...	1	...	...	...	2
Bronchitis.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...
Other Respiratory Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas.....	87	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	80	5	...	...	...	...	1	...	...
Skin and Septic Conditions	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	29	...	...	...	...	...	...	1
Puerperal Pyrexia	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...
Tonsillitis	19	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	1	...	...	...	...
Gastro-Intestinal Diseases	19	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	18	...	...	...	...
Ophthalmia Neonatorum..	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	5	...	...	...
General Diseases .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Injuries	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...
Unclassified.....	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	13
TOTALS.....	2,471	929	530	221	25	46	98	8	2	2	7	26	16	1	1	140	9	11	18	80	39	2	128	57	5	1	6	63

**Present Death Rates compared with those
of Previous Years.**

RETURN SHOWING THE NUMBER OF CASES OF
SCARLET FEVER, DIPHTHERIA AND ENTERIC FEVER ADMITTED TO HOSPITAL
AND MORTALITY RATES PER CENT.
1891-1900.

YEARS.	NUMBER OF CASES ADMITTED TO HOSPITAL.			NUMBER OF DEATHS.			CASE MORTALITY PER CENT.		
	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.
1891-1895	1,105	92	277	34	26	51	3.1	28.3	18.4
1896-1900	1,087	103	442	41	21	86	3.8	20.6	19.5
1915-1934.									
1915-1919	3,402	998	194	99	89	21	2.9	9.0	10.8
1920-1924	3,919	1,037	78	37	73	9	0.9	7.5	11.6
1925-1929	3,612	908	123	43	62	23	1.2	6.8	18.7
1930-1934	6,296	860	220	76	53	15	1.2	6.1	6.8
1935-1936.									
1935	1,236	549	23	9	41	....	0.7	7.4	....
1936	929	530	25	12	40	4	1.2	7.5	16.0

Admissions and Deaths, 1936.

DISEASE.	ADMISSIONS.												DEATHS.													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTALS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTALS.
Scarlet Fever	136	94	82	55	74	37	42	52	72	83	99	103	929	3	1	4	2	3	2	1	5	1	3	2	12	
Diphtheria	77	72	69	40	42	30	37	31	22	42	34	34	530	6	10	4	5	3	...	1	5	1	3	2	40	
Diphtheria Carriers	24	16	42	12	26	6	7	10	9	23	17	29	221	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Group of Fevers	1	1	3	...	...	1	2	4	4	1	3	7	27	...	1	...	...	1	2	1	...	2	3	1	4
Dysentery	2	2	1	1	...	...	4	5	2	20	5	2	46	...	...	...	2	2	2	...	...	1	...	...	8
Measles	1	3	13	30	31	10	2	...	3	...	5	...	98	...	...	...	...	...	...	...	...	...	...	...	...
Rubella	1	1	...	1	2	2	...	...	...	1	...	...	8	...	...	...	...	...	...	...	...	...	...	...	...
Varicella .....	...	...	...	1	...	1	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...
Mumps .....	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
Pertussis .....	...	2	1	1	1	1	1	...	...	...	...	...	7	...	...	1	...	...	...	...	...	...	...	...	1
Epidemic Cerebro-Spinal Meningitis	3	3	2	3	2	2	2	2	...	1	3	3	26	2	...	1	1	1	...	1	1	...	1	1	10	
Other forms of Meningitis	3	...	2	3	4	...	1	...	1	1	...	2	16	3	...	2	3	3	...	1	...	1	...	2	15	
Polioomyelitis .....	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica .....	...	...	...	1	...	...	...	...	12	10	6	16	140	3	2	3	4	4	3	1	1	3	2	4	34
Pneumonia	11	20	13	12	15	11	5	9	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis .....	...	1	2	2	1	...	...	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	1	4	1	1	1	...	...	2	...	1	4	...	11	...	...	1	...	...	...	...	...	...	...	...	...
Other Respiratory Diseases	1	...	3	2	3	1	1	...	2	1	...	...	18	...	...	1	...	...	...	...	...	...	...	...	1
Erysipelas	11	14	4	7	3	4	4	2	2	11	10	8	80	1	2	1	2	1	...	...	...	1	...	1	9
Skin and Septic Conditions	8	3	3	6	5	...	2	5	2	2	2	1	39	...	...	2	...	1	...	...	...	1	...	...	3
Puerperal Pyrexia	1	...	...	...	1	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	2
Tonsillitis	13	8	14	10	11	10	4	9	3	8	24	14	128	...	...	...	...	...	...	...	...	...	...	...	...
Gastro-Intestinal Diseases	2	3	4	2	5	3	3	1	4	9	15	4	55	...	...	...	...	...	1	...	...	1	2	...	6
Ophthalmia Neonatorum	1	2	1	...	...	...	1	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...
General Diseases .....	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Injuries .....	...	...	1	1	...	...	1	...	...	2	...	1	6	...	...	...	1	...	...	...	...	...	...	...	...
Unclassified	10	11	11	5	2	2	...	1	4	5	8	4	63	...	...	...	1	...	...	...	...	...	...	...	1
TOTALS	307	260	272	196	231	121	119	136	143	220	236	230	2471	19	16	15	20	16	7	7	7	10	13	8	14	152

Length of Stay in Hospital of Early Fatal Cases.—The following cases died within a short period after their admission to hospital :—

	<i>Within 24 hours.</i>	<i>Within 48 hours.</i>
Scarlet Fever	3	1
Diphtheria	14	3
Dysentery .....	...	1
Measles	1	...
Encephalitis Lethargica.....	1	...
Epidemic Cerebro-spinal Meningitis.....	2	2
Other Forms of Meningitis	3	1
Pneumonia	9	4
Other Respiratory Diseases	1	...
Erysipelas	2	1
Puerperal Pyrexia .....	...	1
Gastro-Intestinal Conditions	2	...
General Diseases .....	...	1
Total	28	15

Average Stay in Hospital during the last Twenty-nine Years.

YEARS.	All Cases.		Scarlet Fever.		Diphtheria (inc'luding carriers).		Enteric Fever		Other Diseases.	
	Average No.	Average Stay in Days.	Average No.	Average Stay in Days.	Average No.	Average Stay in Days.	Average No.	Average Stay in Days.	Average No.	Average Stay in Days.
1908-12..	1,054	46.7	599	51.7	326	41.3	68	46.3	61	29.6
1913-17..	1,538	39.6	929	45.6	220	39.9	70	47.4	318	20.6
1918-22..	1,408	31.2	758	37.1	215	43.2	15	46.6	420	16.8
1923-27..	1,419	31.9	751	35.2	185	44.3	21	54.0	462	21.1
1928	1,294	22.5	452	29.3	205	33.6	25	44.5	612	12.9
1929	1,713	21.7	543	29.7	247	29.6	38	42.2	885	13.6
1930	1,649	23.9	584	32.5	194	34.7	66	44.3	805	13.5
1931	2,347	27.3	989	36.5	113	46.3	21	50.2	1,224	17.8
1932	2,143	30.3	1,120	35.2	162	57.5	33	47.0	828	17.7
1933	3,040	27.6	1,934	32.7	114	61.6	34	41.2	958	12.7
1934	3,292	30.1	1,669	35.0	503	41.1	66	40.0	1,054	15.5
1935	2,881	31.2	1,236	33.8	736	45.5	23	37.2	886	15.4
1936 .. .	2,471	31.3	929	33.3	751	43.4	25	43.8	766	16.6

DIPHTHERIA.

The marked increase in the incidence of diphtheria in Newcastle and the surrounding area, which first became evident during the autumn of 1934, persisted through 1936, as is shown by the number of cases and carriers admitted to hospital. As the above table shows the combined figures for these cases, which since 1929 had never reached 200, in 1934 rose to 503, and in 1936 reached 751. While the number of cases and carriers combined in 1936 exceeded that of 1935 by 15, there were actually 19 fewer cases and 34 more carriers than in the preceding year.

530 true cases were admitted to hospital, and 221 carriers. 404 of these cases were of the simple faucial or tonsillar type, and in this group there were four deaths. Of these fatal cases, one

died suddenly two hours after admission, another died within 24 hours of admission, a third died after operation for intestinal obstruction, and the fourth developed a severe toxic myocarditis.

In 21 cases the infection was limited to the nose, and there were two cases of aural diphtheria, one requiring a mastoidectomy.

In a group of 75 faucio-pharyngeal cases, with varying degrees of nasal involvement, there were 23 deaths—equivalent to a case mortality of 30.6 per cent.

There were 28 cases of laryngeal or tracheal diphtheria of whom thirteen, or 46.4 per cent. died. In sixteen of these cases the obstruction was so considerable that tracheotomy was performed shortly after admission to hospital, and of these nine died. In two cases tracheotomy had been performed before admission to hospital, and both of these died.

The case mortality of the whole series of 530 cases was 7.5 per cent., compared with 7.4 per cent. in 1935, and 7.6 per cent. in 1934.

The death rate for diphtheria has been practically constant for the last three years. This covers the period during which the disease has become more prevalent in this district, and since the rates for the two preceding quinquennial periods were 6.8 per cent. and 6.1 per cent. respectively, it can be said that, although a proportion of severe cases are being met with, the virulence of the infection does not seem to have increased with the incidence of the disease in this area to the same extent as it would appear to have done in certain other areas.

In one hundred cases, where virulent organisms persistently remained in the throat after recovery from the disease, including also a number of healthy carriers, tonsillectomy was performed. In the majority of cases this procedure rendered the patient free from infection after a short period. Mastoidectomy was carried out on two cases, one of which was a case of aural diphtheria.

The increased number of cases necessitated the use of one spare ward throughout the year, and for the first six months of the year it was found necessary to requisition for diphtheria cases the pavilion at Walker Gate which usually accommodates thirty of the tuberculosis patients. It was also necessary for a period to utilise a ward at the Moor Hospital for the accommodation of convalescent cases and carriers.

The scheme, inaugurated in June, 1934, whereby free immunisation against diphtheria of all children under the age of five was offered to parents, has been continued throughout 1936. The work has been carried out by a part-time officer, and four clinics have been held each week at certain Maternity and Child Welfare Centres. A number of children of school age, whose parents were anxious that they should be immunised, have been treated at clinics held on Saturday mornings.

In the autumn, in co-operation with the Education Authority, it was decided to circularise the parents of the children in a number of the schools of the City, emphasizing the advantages of prophylactic inoculation, and offering free facilities.

The response was most encouraging and the numbers were so large that it was decided, with the consent of the Education Authority, to hold the clinics in the schools, thus minimising as far as possible the amount of time during which the children would be absent from their classes. These clinics commenced in the last week in November, and ten had been held before the end of the year.

A total of 177 clinics were held during the year, 124 being for infants and 53 for school children.

During the year 1,114 infants and 352 school children were immunised, a total of 1,466.

An investigation, commenced in 1934, was continued during 1936, into the incidence and clinical significance of the three types of diphtheria bacilli, *Gravis*, *Intermedius* and *Mitis*. The following facts for 1936 have been supplied by Dr. J. F. Caithness. Wherever possible the organisms from each patient were isolated and classified by the Public Health Laboratory, and an intra-dermal virulence test performed.

In 589 patients—cases and carriers which were proven bacteriologically—the diphtheria bacilli isolated were subjected to further examination in order to classify them into their respective types—*Gravis*, *Intermedius*, and *Mitis*.

Of these 42, or 7.1 per cent., whilst exhibiting virulence as determined by the intra-dermal guinea pig inoculation test, failed in their characteristics to conform to any of the three types.

A further 15, or 2.5 per cent., were capable of classification but were non-virulent to the intra-dermal test; 3 were *Gravis*, and 12 were *Mitis* in type.

The following table shews the distribution between those types of the remaining 532 bacilli, which were virulent and which could be classified into their respective types. The clinical severity of the cases from which they were isolated is also indicated

	No. of Cases.	Per-centage of Total.	CLINICAL CLASSIFICATION							
			Severe.		Moderate.		Mild.		Carriers.	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Gravis	179	33.64	44	24.58	55	30.73	44	24.58	36	20.11
Intermedius	98	18.42	21	21.42	36	36.73	28	28.57	13	13.26
Mitis	255	47.93	14	5.49	63	24.70	91	35.68	87	34.11

The number of deaths occurring in each group were :—

GRAVIS 13 deaths.

INTERMEDIUS ... 4 deaths.

MITIS 4 deaths, 1 due to broncho-pneumonia.

SCARLET FEVER.

The incidence of scarlet fever in the City which, as shown by the notification and admissions to hospital, had been gradually increasing since 1928, until it reached its peak in 1933, now appears to be on the wane, and in 1936 929 cases of scarlet fever were admitted to hospital, as against 1,669 in 1934 and 1,236 in 1935. This figure is, however, somewhat in excess of what would be termed a normal year.

The Isolation Hospital on the Town Moor was in use until the end of May to accommodate convalescent cases.

The prevailing type of scarlet fever remained mild, and the mortality rate was 1.3 per cent., as compared with 1.8 per cent. in 1934, and 0.7 per cent. in 1935.

Of the twelve fatal cases six had received antitoxin. One was suffering from severe burns and died three hours after admission, another died from an acute cellulitis which spread from a septic finger, and a third was admitted with an appendix abscess and died shortly after operation. Of the other three in this group, one was an acute case which died four hours after admission, another developed a streptococcal pharyngitis, and the third, a child of one year, had a double mastoidectomy performed, and subsequently developed a streptococcal tracheitis which necessitated a tracheotomy.

The six cases which did not receive antitoxin consisted of one case suffering from burns, one from scalds, a case desquamating on admission which had developed a mediastinal abscess, and one which was admitted as mastoiditis following scarlet fever from an extra mural area. This child died from secondary hæmorrhage in the operating theatre before the operation was commenced. The infection, spreading from the mastoid area, had eroded the jugular vein, and the subsequent hæmorrhage had formed a retro-pharyngeal swelling which suddenly burst.

Of the remaining two cases, one developed broncho-pneumonia, and one died very suddenly from cardiac failure.

Seven deaths were, therefore, due to scarlet fever and its complications, without any additional factor, giving a more accurate death rate of 0.75 per cent.

Scarlet fever antitoxin has been used to a slightly greater extent than last year, but to a lesser extent than in the six previous years. The numbers and relative proportions of patients receiving this form of treatment for the period 1926-1936, are as follows :—

	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Scarlet Fever Cases admitted	831	741	452	543	584	989	1,120	1,934	1,669	1,236	929
Number treated with Antitoxin..	78	172	177	169	249	483	380	436	331	260	243
Percentage treated with Antitoxin..	9.5	20.3	39.2	31.1	42.6	48.8	33.9	22.5	19.8	22.0	26.1

Scarlet fever antitoxin has now been in use for eleven years, and opinions as to its value and its limitations are becoming more definite.

It seems clear that while it is very efficacious in the treatment of severe cases showing signs of toxæmia, and of considerable value in true "toxic" cases, its power to prevent the onset of complications is negligible, and furthermore, it is of little value in the treatment of these complications or the septic sequelæ of scarlet fever.

The general consensus of opinion seems to be that it should be reserved for the treatment of the more severe cases, and that its routine use in mild cases of scarlet fever is not advisable.

In the following table is summarised the statistical information regarding all cases of scarlet fever treated during the year under review :—

SCARLET FEVER.	Num-ber.	Per-centage treated with Anti-toxin.	Per-centage with Compli-cations.	Mor-tality Rate.	Return Case Rate.	Average stay in Days in Hospital.		
						All Cases.	Com-plicated Cases.	Non-compli-cated Cases.
All Cases.....	929	26.1	33.8	1.2%	3.6%	33.3	43.8	27.7
Antitoxin Cases	243	100	37.8	2.47%	4.9%	34.8	45.8	28.1
Non-Anti-toxin Cases	686	Nil.	32.3	0.87%	2.7%	32.7	42.9	27.6

PERCENTAGE INCIDENCE OF COMPLICATIONS.

	Rhin-orrhœa.	Ot-orrhœa.	Adenitis	Rheu-matism.	Album-inuria.	Neph-ritis.	Cardiac.	Other Compli-cations.
All Cases..	12.8	7.1	7.4	0.4	1.3	0.6	1.7	2.4
Antitoxin Cases	15.2	4.9	9.5	0.8	1.6	0.4	2.0	3.3
Non-Anti-toxin Cases	11.9	7.9	6.7	0.3	1.2	0.7	1.6	2.0

Otorrhœa and Rhinorrhœa.—The work of the Consulting Oto-Rhinologist to the Hospital (Mr. W. Frank Wilson), in the treatment and supervision of scarlet fever cases complicated by otorrhœa or rhinorrhœa has been continued along lines developed in recent years.

The incidence of these complications was high and showed a slight increase on last year. 314 cases occurred in 929 admissions—a complication rate of 33.8 per cent., as contrasted with 24.1 per cent. in the previous year.

The distribution of these cases according to whether or not they were treated with scarlet fever antitoxin, and their respective

stay in hospital, are shown in the following table :—

		Number of Cases.	Average Stay in Hospital (days).
Non-Antitoxin Cases	Rhinorrhœa	82	43.6
	Otorrhœa	54	52.9
Antitoxin Cases	Rhinorrhœa	37	50.6
	Otorrhœa	12	75.5
	Total	185	49.6

The average stay per patient of cases in this group was 49.6 days, as contrasted with the figure given for 1935, namely, 48.7 days.

In the treatment of these patients it was found necessary to perform sixty-one operations—thirty-two for the removal of tonsils and adenoids, and twenty-nine for mastoidectomy.

Subsequent Progress.—As in previous years, supervision of cases of rhinorrhœa and otorrhœa has been maintained wherever possible after their discharge from hospital, and 245 cases of this type have been visited at varying intervals. The result of these visits showed that amongst 119 cases of rhinorrhœa, three, or 2.5 per cent., still had slight nasal discharge, whilst ten or 15.1 per cent., of 66 cases of otorrhœa had slight persisting deafness or discharge from the ear.

All the cases in which the nasal or aural discharge has persisted have been kept under observation by Mr. Frank Wilson at the Out-Patient Department of the Royal Victoria Infirmary.

“ Return ” Cases.—The year’s total admissions of scarlet fever cases, which numbered 928, produced 34 “ Return ” cases, a percentage of 3.6. These arose from 31 “ Infecting ” cases, a percentage of 3.3.

SEASONAL OCCURRENCE.

QUARTER.	Total Scarlet Fever Admissions.	“ Infecting ” Cases.		“ Return ” Cases.	
		No.	Percentage.	No.	Percentage.
January to March	312	13	4.1	14	4.5
April to June	166	3	1.8	4	2.4
July to September	166	3	1.8	3	1.8
October to December	284	12	4.2	13	4.6

Of the 31 "Infecting" cases (a) 13 had no complications or discharges whilst in hospital, and remained "clean" after reaching home, (b) 1 had no complications whilst in hospital, but developed discharges after reaching home, while (c) 17 had complications whilst in hospital, but were "clean" on discharge.

The figure of 3.3 for the percentage of "Infecting" cases is slightly lower than that for last year, and is a distinct improvement on the figures for the three preceding years. It was, however, to be expected that, with the lighter incidence of scarlet fever in the area, the return case rate would fall.

"RETURN" CASES FOR YEARS 1906-1936.

YEARS.	Total Scarlet Fever Admitted.	"Infecting" Cases.		"Return" Cases.	
		No.	Percentage.	No.	Percentage.
1906-10	2,203	63	2.8	82	3.7
1911-15	5,185	217	4.2	251	4.8
1916-20	3,202	104	3.2	112	3.5
1921-25	3,850	93	2.4	105	2.7
1926-30	3,160	111	3.5	110	3.5
1931.....	989	37	3.7	39	3.9
1932.....	1,120	49	4.4	56	5.0
1933.....	1,934	96	5.0	107	5.5
1934.....	1,669	86	5.1	94	5.6
1935.....	1,236	48	3.8	52	4.2
1936.....	928	31	3.3	34	3.6

ERYSIPELAS.

Of recent years erysipelas has shown a tendency to become one of the commoner and severer infectious diseases prevailing in the City. Its incidence and mortality approximate roughly to those of diphtheria, with the notable exception that while the latter is a disease of children and young people, erysipelas principally attacks the middle-aged and elderly.

In the following table the number of notifications of erysipelas, the deaths caused by the disease, and the case mortality rate are detailed for the years 1926-1936. In addition, similar information is given for such of these cases as were admitted to the City Hospital, together with the duration of their stay in hospital.

YEAR.	Total Notifica- tions.	Deaths.	Mor- tality Rate. Per cent.	CITY HOSPITAL.			
				Admis- sions.	Deaths.	Mor- tality Rate. Per cent.	Dura- tion of stay in Hospital. (days).
1936....	176	12	6.8	80	9	11.2	18.3
1935....	239	15	6.3	127	20	15.7	13.1
1934....	240	16	6.6	126	23	18.2	14.2
1933....	264	12	4.5	116	15	12.9	17.4
1932....	205	13	6.4	100	11	11.0	14.6
1931....	218	11	5.0	91	4	4.4	14.0
1930....	208	12	5.8	107	11	10.3	11.3
1929....	220	11	5.0	85	8	9.4	13.0
1928....	234	19	8.1	49	6	12.2	12.6
1927....	212	12	5.7	51	2	3.9	14.5
1926....	172	5	2.9	31	2	6.5	25.6

The mortality rate for these cases remains high. In 1936 this was 11.2 per cent. for all cases of erysipelas treated in hospital—as contrasted with 15.7 per cent. in 1935 and 18.2 per cent. in 1934.

Of the 80 cases admitted to hospital, 7 were given antitoxin, and of these one died, giving a mortality rate of 14.3 per cent. Fifty-five cases received local treatment only, and of these seven died, equivalent to a mortality rate of 12.7 per cent.

The remaining eighteen cases were treated with the new pharmacological preparation “Prontosil” which has its origin from Germany. Of these 18 cases one died, a mortality rate of 5.5 per cent. This fatal case was a two-months old baby.

This new remedy has only been used during the last four months of the year, and the number of cases treated as yet is small. From clinical observations alone, however, as has been stated by other observers, it would appear that the use of “Prontosil” or its derivatives will mark an important advance in the treatment of erysipelas.

Mixed Infections.

33 patients, or 1.3 per cent., of those sent into hospital were found, on or shortly after admission, to be suffering from or

incubating two distinct infectious diseases, as follows :—

Scarlet Fever with Diphtheria	6
Scarlet Fever with Measles	2
Scarlet Fever with Rubella	3
Scarlet Fever with Varicella	4
Scarlet Fever with Pertussis.....	1
Scarlet Fever with Mumps	1
Scarlet Fever with Erysipelas	2
Diphtheria with Scarlet Fever	5
Diphtheria with Pertussis.....	1
Typhoid Fever with Diphtheria Carrier.....	1
Dysentery with Varicella	1
Rubella with Varicella	1
Measles with Varicella	2
Measles with Scarlet Fever	1
Mumps with Scarlet Fever	1
Pneumonia with Diphtheria.....	1
	<hr/>
	33
	<hr/>

Cross Infections.

During the year 48 patients, or 1.9 per cent. of the total admissions, contracted a second infection in the wards of the hospital. The details are as follows, the primary infection being stated first :—

Scarlet Fever with Diphtheria	5
Scarlet Fever with Varicella	11
Scarlet Fever with Pertussis.....	4
Diphtheria with Dysentery	5
Diphtheria with Scarlet Fever	17
Diphtheria with Measles	1
Diphtheria with Rubella	2
Diphtheria with Pertussis.....	1
Diphtheria with Varicella	1
Pneumonia with Scarlet Fever.....	1
	<hr/>
Total	48
	<hr/>

There were no deaths.

Staff Sickness.

The amount of sickness among the Nursing Staff showed an increase on the previous year.

Nursing Staff.—71 of the nursing staff were off duty owing to sickness for a total of 1,699 days. One nurse contracted tuberculosis, one diphtheria, and one developed tonsillitis and was found to be a diphtheria carrier. Six suffered from influenza, fifteen from tonsillitis, fifteen from various skin and septic conditions, and three from minor accidents. Four suffered from general diseases, such as rheumatism, and one developed appendicitis. The remainder were nursed in their own homes.

Domestic Staff.—78 were off duty through sickness for a total of 1,336 days. One developed tuberculosis, five suffered from influenza, eleven from tonsillitis, and nine from skin and septic conditions. Two developed scarlet fever, three became temporary diphtheria carriers, one developed appendicitis, two suffered from general diseases, and five from minor accidents. The remainder were nursed in their own homes.

During the year the practice of immunising the staff against scarlet fever, diphtheria, and the enteric group of fevers has been carried out as previously.

The nurse who contracted diphtheria had previously been immunised, and gave a negative Schick test. She was an example of the occasional case of diphtheria occurring in a Schick negative person. Both she and the nurse who was found to be a carrier required to have their tonsils removed before they could be rendered free from infection.

The nurse who developed tuberculosis was transferred to Barrasford Sanatorium, where she made good progress.

SMALLPOX AND ISOLATION HOSPITALS, TOWN MOOR.

Owing to the disappearance of smallpox from the neighbourhood of Newcastle upon Tyne, it was not found necessary to bring the wards of the smallpox hospital into use for that disease at any time throughout the year.

The wards of both hospitals, however, were again utilised to accommodate convalescent cases of scarlet fever and diphtheria. The wards were in use from January to May, temporary nurses and domestics being engaged to staff the hospital.

E. F. DAWSON-WALKER, M.D.,

Deputy Medical Superintendent.

City Hospital for Infectious Diseases,

Newcastle upon Tyne,

8th May, 1937.

DISINFECTION, Etc.

8,068 cases of notifiable infectious disease were inquired into by the Infectious Disease Inspectors, Health Visitors and Tuberculosis Nurses and, with the exception of measles and chickenpox, the houses or rooms connected therewith disinfected by spraying with formalin. In connection with cases of tuberculosis, 713 houses, including 950 rooms, were similarly disinfected. 804 visits were made, and disinfection was also carried out in 329 special cases.

INFECTED ARTICLES TREATED IN THE DISINFECTING APPARATUS AT THE CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE.

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1936.	1935.	1936.	1935.
27,247	29,153	12,150	15,554

5,354 articles were also disinfected at the Smallpox Hospital. The staff have thus dealt with 44,751 articles during the year. Fluid disinfectant, in half-pint tins, was given out free on the order of the special inspectors, for home use in connection with infectious disease. Every precaution was taken to ensure that the disinfectant was properly and economically used.

DISINFECTANTS DISTRIBUTED—1936.

FROM	FOR INFECTIOUS DISEASES.	FOR PHTHISIS.
	FLUID (½ pint tins.)	FLUID (½ pints.)
Health Department.....	69	....
Tuberculosis Dispensary .....	....	640
Corporation Yard, Benwell	1	....
TOTAL.....	70	640

BACTERIOLOGICAL EXAMINATIONS, 1936.

The following is a report of the bacteriological examinations carried out on behalf of the Health Department of the Newcastle Corporation, at the Public Health Laboratory (University of Durham College of Medicine), at Armstrong College, Newcastle upon Tyne.

A total of 12,579 examinations were made during the year. This is a slight increase on the previous year, when 12,071 was the total, while in 1934 the total was 9,757.

The nature of the investigations and the results obtained are given under the various sections and are as follows :—

BACTERIOLOGICAL EXAMINATIONS :—

	Swab for Diphtheria.		Sputum for Tubercle bacilli (microscopically).		Swabs for Hæmolytic Streptococci.	
	Total.	Positive.	Total.	Positive.	Total.	Positive.
Number of Examinations.....	5,341	552	595	77	55	33
Percentage Positive	10.33		12.94		60.0	

The number of swabs examined for diphtheria bacilli has continued to be heavy and shows a slight increase even on 1935. The number was especially heavy in March and even in the summer months the numbers examined were in marked excess of previous years.

AGGLUTINATION REACTIONS :—

i. *Enteric Fever.*

A total of 66 bloods were examined for Widal Reactions against *B. typhosus*, *B. paratyphosus*—A. and *B. paratyphosus*—B., 11 were positive and 3 were suspicious with *B. typhosus* “H” emulsions,

7 were positive and one was suspicious with *B. paratyphosus*—B. “H” emulsions,

1 gave a doubtful reaction with *B. paratyphosus*—A. “H” emulsion,

38 were negative to all “H” emulsions and 5 negative to *B. typhosus* “H” only,

1 was positive, 1 suspicious and 2 were negative to *B. typhosus* “O” emulsions.

ii. *Abortus Fever.*

3 bloods were examined for agglutination to *Brucella abortus* and *Brucella melitensis*, all were negative.

MILK EXAMINATIONS :—

i. For *tubercle bacilli* by animal inoculation :—

A total of 376 milks were inoculated and 10 positives were obtained = 2.66%.

ii. *Routine milks* for examination for *B. coli* and total count.

When *B. coli* is taken as indicator the results were :—

B. coli not found in	1.0 ml. or less	59	} 140
B. coli found in	1.0 ml. but not in less	34	
B. coli ,,	0.1 ml. ,,	34	
B. coli ,,	0.01 ml. ,,	13	
<hr/>			
B. coli found in	0.001 ml. but not in less	11	} 39
B. coli ,,	0.0001 ml. ,,	17	
B. coli ,,	0.00001 ml. ,,	11	
Total		179	

Thus, 140 were considered *satisfactory* and 39 *unsatisfactory*. With these samples a total count of the number of organisms able to grow on agar medium at 37°C. was also made.

Taking 200,000 organisms per ml. as the standard (as in Grade “A” milk) it was found that,

119 of the samples gave totals below 200,000 and were thus *satisfactory* and 60 of the samples were above 200,000 and were *unsatisfactory*.

iii. *Graded Milks*.

142 samples of “ Graded Milks ” were examined up to the end of May in accordance with the scheme of the Ministry of Health under the Milk and Dairies (Amendment) Act, 1922, and Milk (Special Designations) Order, 1923.

The following results were obtained from January to the end of May :—

	Total.	Satisfied the test.	Failed to satisfy test.
Certified Milk	13	12	1
Grade “A” (T.T.)	71	67	4
Grade “A”	41	40	1
Pasteurised Milk	17	14	3
Totals	142	133	9

After 1st June, 1936, the new Milk (Special Designations) Order, 1936, started to operate, although the new method of testing did not come into force until 1st January, 1937.

Under the new Order 202 samples were examined from 1st June to the end of December, the results being as follows :—

	Total.	Satisfied test.	Failed to satisfy test.
Ministry samples, T.T.	41	36	5
Tuberculin Tested	99	75	24
Accredited	36	31	5
Pasteurised	26	15	11
Totals	<u>202</u>	<u>157</u>	<u>45</u>

WATER EXAMINATIONS :—

i. Routine samples gave the following results in a total of 184 examinations :—

Class I.	B. coli not found in 100 ml. or less	119
Class II.	„ found in 100 ml. but not in less	39
Class III.	„ „ 10 ml. „	20
Class IV.	„ „ 1 ml. „	6
		<u>184</u>

ii. During the months of February and September, 31 samples of water from various Swimming Baths in the City were examined. Detailed reports were sent and the following is a summary of the results, taking only the presence of B. coli as the indicator :—

Class I.	B. coli not found in 100 ml. or less	10
Class II.	„ found in 100 ml. but not in less	10
Class III.	„ „ 10 ml. „	5
Class IV.	„ „ 1 ml. „	4
Class V.	„ „ 0.1 ml. „	2
		<u>31</u>

iii. In addition some special waters were examined and detailed reports were returned :—

During August samples of water from taps in			
Sutton's Dwellings	...	...	2
During October samples of water from the			
Northern Counties' Orphanage	...	...	2
Grammar School Baths	...	...	2
and samples of water (before and after chlorination) from			
Barrasford Sanatorium	...	...	2
			<u>8</u>
Total	...	...	<u>8</u>

VENEREAL DISEASES :—

	Total.	Serological reactions.	Microscopical examinations.
From Treatment Centres	1,170	1,170	....
From Institutions	1,384	1,374	10
From Private Practitioners..	563	382	181
Total	3,117	2,926	191

OTHER EXAMINATIONS :—

(a) **Diphtheria.**—The typing of diphtheria bacilli according to the types of Anderson, McLeod and others and intra-dermal virulence tests have been continued. Subcutaneous virulence tests have also been done on a number of cultures mostly from convalescents. The following results were obtained during the year :—

VARIETY OF ORGANISMS ISOLATED.

Total.	Diphtheria types.				B. Hofmanni.	Saccharose fermenters.	No diphtheria bacilli isolated.
	Gravis.	Mitis.	Intermediate	Atypical.			
795	206	303	110	74	36	8	58
Total....693							

VIRULENCE TESTS.

Intradermal.		Subcutaneous.	
Positive.	Negative.	Positive.	Negative.
641	56	140	27
Total.....697		Total.....167	

The total of 56 negative intradermal tests were obtained with the following types :—*Gravis* 3, *Mitis* 20, *Intermediate* 1, *Atypical* 26, *B. hofmanni* and *Saccharose fermenters* 3 each.

(b) **Enteric Fevers.**—The following specimens of fæces were received and examined for organisms of the enteric group :—

	Specimens.	Positive.
From the City Infectious Diseases Hospital	73	28
From the City Health Department	7	5
From the Newcastle General Hospital.....	2	1
	—	—
Total.....	82	34
	==	==

From this total of 82 specimens, 34 positive results were obtained :—

B. typhosus being isolated ... 12 times.

B. paratyphosus—B being isolated 22 „

Various non-pathogenic non-lactose fermenting organisms such as B. paracolon, B. Morgan No. 1, B. proteus and B. pyocyaneus were also isolated a number of times.

Specimens of *Urine* were also similarly examined :—

From the City Infectious Diseases Hospital. 26.

From these B. paratyphosus—B. was isolated once, the remaining 25 specimens were negative.

(c) **Bacillary Dysentery and Food Poisoning.**—The examination of fæces for dysentery bacilli and organisms of the food poisoning group has been continued, a total of 325 specimens being submitted as follows :—

	Specimens.	Positive.
From the City Infectious Diseases Hospital	174	45
From the City Health Department	12	6
From the Newcastle General Hospital.....	139	23
	—	—
Totals.....	325	74
	==	==

From the 74 giving positive results the following organisms were isolated :—

B. dysenteriae Flexner	23	times.
B. dysenteriae Sonne	18	„
B. dysenteriae Newcastle	6	„
Salmonella ærtrycke	12	„
Group phase salmonella	9	„
Salmonella newport	1	„
Atypical non-lactose fermenters	5	„

The Flexner dysentery bacilli isolated were of the following types :—

Type V. 0, W. 0, X. 10, XZ. 2, Y. 0, Z. 11. Total = 23.

The numbers of dysentery bacilli isolated this year are much less than in previous years, but the number of Salmonella group organisms is increased.

The group phase *Salmonella* was isolated from patients connected with an outbreak of " Food Poisoning " which occurred at Sedgfield, Co. Durham, at the end of August, 1936. The organism isolated was in group phase and it was later identified as *Salmonella* Thompson (Scott), although it had shown best agglutination with a *B. paratyphosus*—C serum.

(d) **Cerebro-spinal Fluids.**

(i) A total of 28 cerebro-spinal fluids were received for bacteriological examination ; detailed reports were returned and the following is a summary of the results :—

(1) Tuberculous	4
(2) Meningitis with inconclusive indication of infecting organism	12
(3) Streptococcal	1
(4) No definite indication of meningitis	11
Total	<u>28</u>

(ii) 21 specimens of cerebro-spinal fluids from cases of suspected C.S. Meningitis were received for cultivation and typing, Results were as follows :—

(1) Group I.	6
(2) Group II.	0
(3) Atypical Gram-negative cocci (not agglutinating with Group I. or II. serum)	3
(4) No meningococci grown (sterile)	4
(5) No meningococci isolated (cultures contaminated)	8
Total	<u>21</u>

(e) **Typing of Pneumococci.**

This was started in February, typing being done with peritoneal exudate after mouse inoculation by (1) rapid method on a slide and also by (2) macroscopic method with a young broth culture, only Type I., II. and III. sera being employed.

A total of 18 sputa were examined and practically none of these were from Acute Lobar Pneumonia during the first 3 days. Mostly, both methods gave similar results.

3 were Type II. by both methods,
10 belonged to Group IV. by both methods,
2 were negative or very scanty *Pneumococci* present but
3 gave variations :—

	<i>Rapid.</i>	<i>Macroscopic.</i>
	1. Group IV.	Type II. atypical.
	2. Type I. and II.	Type II. „
	3. Type I. and II.	Type I.
Total	<u>18</u>	

(f) Miscellaneous Examinations.

Direct examinations of throat swabs for diphtheria bacilli or Vincent's angina	13
--	----

From the City Health Department.

(a) P.M. specimens from a suspected case of Food-poisoning (small intestine, colon, spleen)	1
(b) Tomato Sauce ? Food-poisoning organisms	1
(c) Blood agglutination test for dysentery	1

From the City Hospital, Walker Gate.

Urines for bacteriological examination	3
Urines for guinea-pig inoculation	1
Blood cultures for organisms.....	3
Blood for agglutination test for dysentery	2
Pus or pleural fluids for organisms.....	6
Smear for B. anthracis	1
Culture from appendix wound ? diphtheria bacilli	1
Total	<u>33</u>

(g) Measles Serum.—One batch was put up during March.

(h) Newcastle General Hospital.—A number of bacteriological examinations for the Hospital have been carried out and the following is a summary :—

CHARACTER OF EXAMINATION.

Autogenous Vaccines	7
Blood cultures for organisms	7
Blood agglutination test for dysentery.....	1
Catgut for sterility	1
Cerebro-spinal fluids for bacteriological examinations	8
Fæces for tubercle bacilli	9
„ parasites	9
„ general bacteriological examination	3
Fluid from liver abscess and scrapings from cyst wall for amœbæ	3
Leptospira :—Bile	1
„ Blood.....	1
„ Urine	2
Pleural fluid or empyema pus for organisms	16
Pus from various sources	12
Sputum for organisms.....	3
Swabs (throat) for organisms.....	2
Urines for bacteriological examination	14
„ microscopical „	4
„ animal inoculation for tubercle bacilli.....	5
Total	<u>108</u>

The following table gives a complete summary of the various examinations, including the year 1935 for comparison :—

Nature of Investigation.	1935.	1936.
Throat swabs for B. Diphtheriae	5,114	5,341
Sputa for Tubercle bacilli	571	595
Swabs for Hæmolytic Streptococci	45	35
Agglutination tests :—		
Against the Enteric Fevers	65	66
Against Brucella Abortus.....	3	3
Milk Examinations :—		
For the Tubercle Bacillus	347	376
For Bacillus Coli and Count	154	179
Graded Milk	401	{142 {202
Water Examinations :—		
For Bacillus Coli	196	184
For complete examination	40	39
Venereal Diseases	2,919	3,117
Other Examinations :—		
(a) Diphtheria—Type of bacilli	692	795
Virulence tests—(i) intradermal	700	697
(ii) subcutaneous	136	167
(b) Enteric Fevers—(i) Fæces	98	82
(ii) Urine	25	26
(c) Bacillary Dysentery and Food-poisoning group.....	425	325
(d) Meningitis (various) C.S. Fluid	41	49
(e) Pneumococcal Typing	—	18
(f) Miscellaneous	51	33
(g) Newcastle General Hospital	48	108
Total	12,071	12,579

(Signed) S. H. WARREN, M.R.C.S. (Eng.), D.P.H. (Lon.),

Director, Public Health Laboratory.

University of Durham College of Medicine,

Newcastle upon Tyne,

4th March, 1937.

**REPORTS OF THE
TUBERCULOSIS MEDICAL OFFICER
AND
MEDICAL SUPERINTENDENT,
BARRASFORD SANATORIUM.**

IV.—TUBERCULOSIS.

**TUBERCULOSIS DISPENSARY,
BARRASFORD SANATORIUM.**

TUBERCULOSIS.

Report of the Tuberculosis Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit, herewith, my report for the year 1936.

The general work of the department has been on similar lines to that of 1935 and there have been no changes in the Dispensary staff or weekly number of clinics held. Certain improvements have been made, however, with regard to the examination of contacts and more time has been devoted to this work and the consideration of the home and family of the patient, the details of which are set out in the appropriate paragraphs in this report.

The co-operation between the Tuberculosis Dispensary and the doctors in the City has always been very good, but has been further improved by more frequent correspondence with regard to patients and contacts. Doctors have also been loaned x-ray films of their patients in cases where there was difficulty in diagnosis or some point of special interest. This service has been greatly appreciated.

The X-ray facilities in the City are good; patients living in the West being X-rayed at Newcastle General Hospital and in the East at the Sanatorium Pavilions, City Hospital for Infectious Diseases, Walker Gate, but these arrangements mean additional journeys and inconvenience for patients. To make the Tuberculosis Scheme thoroughly efficient an X-ray apparatus should be installed in the Tuberculosis Dispensary. Difficulties exist in the present building, which is old and too small. During the year the Dispensary was visited by several members of Committee and plans for a new building were drawn up by the City Architect, from which an approximate cost was estimated. This has been sent to the Commissioner for Special Areas to ascertain if a grant towards the cost can be obtained.

I am indebted to the Health Committee for sending me away for one week during the year to visit five different Local Authorities to see certain points in their dispensary organisations and sanatoria.

The Tuberculosis Dispensary. 447 clinics have been held at the Dispensary at each of which an average of 19 patients was seen, of these 5 were stripped and carefully physically examined, and in addition many minor examinations were made and recorded.

Attendances at the Dispensary.—2,949 persons attended the Dispensary during the year or were visited in their homes, registering 8,623 attendances, and 2,334 complete physical examinations were made. 1,710 cases attended for the first time; of these 781 were sent by general practitioners, 282 by the Dispensary Visiting Nurses, 104 by the Newcastle-upon-Tyne Dispensary, 23 by the Royal Victoria Infirmary, 23 by the School Medical Officer, 76 by the staff of the Newcastle General Hospital, 30 by the Maternity and Child Welfare Centres, 39 came of their own accord under special circumstances, 313 were sent by the Tuberculosis Dispensary Medical Staff and smaller numbers from other sources.

Of the 1,710 new cases, 446 had lived with patients known to have tubercle bacilli in their sputum, 232 with tuberculosis patients who had not tubercle bacilli in their sputum, and 47 were contacts of persons who had died from pulmonary tuberculosis.

Table 1 gives details of the New Cases examined (excluding contacts), and Table 2 gives details of the recommended contacts as per Memo. 37/T (revised). I am pleased to report that the latter figures have increased from 447 in 1935.

NEW CASES EXAMINED (EXCLUDING CONTACTS), DURING THE YEAR 1936.
(First Schedule, Part A., Memo. 37/T., Revised).

Diagnosis.	Males.		Females.		Totals.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis	169	12	128	19	328
Non-Pulmonary Tuberculosis	22	25	18	18	83
Diagnosis not completed	19	9	10	4	42
Non-Tuberculosis	212	110	261	76	659
TOTALS	422	156	417	117	1,112

Contacts.—A complete list of names and ages of the contacts of each tuberculous case is kept in the patient's dossier and every effort is made by the medical and nursing staff of the Dispensary to have all these people examined and X-rayed. The names of any that are children below the age of 5 years are sent at weekly intervals to the Maternity and Child Welfare Medical Officer and those between the ages of 5 and 14 years to the School Medical Officer. These two Medical Officers are co-operating in this

ANNUAL RETURN SHOWING IN SUMMARY FORM (a) THE CONDITION AT THE END OF 1936 OF ALL PATIENTS REMAINING ON THE DISPENSARY REGISTER; AND (b) THE REASONS FOR THE REMOVAL OF ALL CASES WRITTEN OFF THE REGISTER. THE TABLE IS ARRANGED ACCORDING TO THE YEARS IN WHICH THE PATIENTS WERE FIRST ENTERED ON THE DISPENSARY REGISTER AS DEFINITE CASES OF PULMONARY TUBERCULOSIS, AND THEIR CLASSIFICATION AT THAT TIME.

[illegible]

work. The Maternity and Child Welfare Medical Officer keeps a separate card index of these children and supplies them with emulsion. The School Medical Officer pays special attention to them during routine examinations, and in both Departments if any of them are thought to be delicate they are referred to the Tuberculosis Dispensary for expert opinion.

In every case where a death from tuberculosis has occurred in the City the consent of the General Practitioner, who attended the deceased, is first obtained and then the remainder of the family are seen or written to and urged to be examined in case any of them may be developing tuberculosis. In this way a number of very early cases of tuberculosis have been found and many contacts seen.

As in previous years contacts have been examined and x-rayed by the Tuberculosis Medical Officer during visiting hours on Wednesday afternoons at the Sanatorium Pavilions, City Hospital for Infectious Diseases, Walker Gate.

The details of the contacts seen, which number 598, are set out in the following table.

169 were seen during domiciliary visiting and 55 at the Sanatorium Pavilions, City Hospital, Walker Gate, on relatives' Visiting Afternoons.

CONTACTS EXAMINED DURING THE YEAR 1936.
(First Schedule, Part A., Memo. 37/T., Revised).

Diagnosis.	Males.		Females.		Totals.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis	18	2	14	5	39
Non-Pulmonary Tuberculosis .....	.....	1	4	4	9
Diagnosis not completed	2	7	6	6	21
Non-Tuberculosis	73	130	199	127	529
TOTALS	93	140	223	142	598

221 cases, who had been seen previously and discontinued, returned for re-examination. The details are given below :—

CASES DISCONTINUED IN PREVIOUS YEARS, AND RETURNED DURING THE YEAR 1936 (INCLUDED IN PREVIOUS TABLES 1 AND 2.)

Diagnosis.	Males.		Females.		Totals.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis	19	....	15	2	36
Non-Pulmonary Tuberculosis	2	....	2	....	4
Diagnosis not completed	5	....	2	1	8
Non-Tuberculosis	39	32	78	24	173
TOTALS	65	32	97	27	221

The following table gives further details of patients and cases who attended the Dispensary or were visited in their homes :—

	Number of Patients and Cases who attended the Dispensary (or were visited in their homes), during the Year 1936.			
	Total.	Males.	Females.	Under 15 years of age.
" Sputum Positive Cases "	743	435	294	14
" Negative Cases "	2,206	643	758	805
TOTALS	2,949	1,078	1,052	819

Cases and patients written off the Dispensary register during the year.

CASES AND PATIENTS WRITTEN OFF THE DISPENSARY REGISTER DURING THE YEAR 1936.

(First Schedule, Part A., Memo. 37/T., Revised).

DIAGNOSIS.	MALES.		FEMALES.		TOTALS.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis, Recovered	22	1	16	....	39
Non-Pulm. Tuberculosis, Recovered	16	5	18	4	43
Non-Tuberculosis	313	244	474	219	1,250
Left district, lost sight of, or will not attend Dispensary	80	20	67	11	178
TOTALS	431	270	575	234	1,510

At the end of the year the number of patients and cases on the Dispensary register was 1,797. These are tabulated below :—

NUMBER OF CASES AND PATIENTS ON DISPENSARY REGISTER
AT END OF YEAR 1936.

(First Schedule, Part A., Memo. 37/T., Revised).

DIAGNOSIS.	MALES.		FEMALES.		TOTAL.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis (T.B. in Sputum)	404	4	267	9	684
Pulmonary Tuberculosis (no T.B. in Sputum)	268	61	206	60	595
Non-Pulmonary Tuberculosis	113	130	105	106	454
Diagnosis not completed	21	16	16	11	64
TOTALS	806	211	594	186	1,797

The two tables (pages 114A and 114B) are self-explanatory and are required by the Minister of Health under Memo. 37/T (revised).

Domiciliary Visits.—During the year I made 382 domiciliary visits to 213 patients and 169 contacts. These are included in “Attendances at Dispensary.”

Relations with other Departments and Hospitals.—The closest co-operation has existed between the Tuberculosis Dispensary and all the various departments of the Health Department. Constant interchange of information and patients has taken place between the School Medical Service and the Tuberculosis Dispensary. The relation between it and the other Medical Services in the City has, as formerly, been most satisfactory.

Voluntary Tuberculosis Care Council.—In November, 1936, Mr. Girling, Joint Hon. Sec., resigned. The work of the Council has gone on with as little interruption as possible, but at the time of writing its reconstruction is under consideration. During 1936, 136 patients were referred to the Voluntary Tuberculosis Care Council for consideration. The assistance given was as follows :—

	Number of Patients.
Loan of bed and bedding	37
Total number of beds and bedding on loan	147
Milk	34
Outfits of clothing	69
Eggs	110
Surgical Appliances	15
Other assistance.....	52
Referred for adoption under “Jubilee Scheme”	71

Nurses' Visits to Patients.—793 new patients were seen and 10,104 subsequent visits made. A total of 1,708 were upon their lists on December 31st, 1936, comprising of 762 males, 566 females and 380 children. As there are four nurses constantly visiting in the City, each has approximately 427 patients upon her books. The infectious cases of pulmonary tuberculosis were visited once a month. The others at longer intervals.

X-ray Examinations.—If the diagnosis of a case is uncertain an X-ray examination gives valuable assistance. This is carried out either at the Sanatorium Pavilions, City Hospital, Walker Gate, or at Newcastle General Hospital, and now with the improved facilities that exist, every new patient is X-rayed except where peculiar circumstances are present. During the year a total of 1,637 films were taken in connection with Dispensary patients, 991 at the City Hospital, Walker Gate, and 646 at Newcastle General Hospital.

Sputum Examinations.—An effort is made to examine the sputum from every possible case and in many instances repeated examinations are necessary. 1,223 specimens of sputum were examined at the Dispensary, of these 240 contained tubercle bacilli. In addition 595 sputum examinations were carried out at the University of Durham Bacteriological Laboratory in the City, to which medical practitioners may send specimens. 77 of these were positive.

The Sanitary Inspector.—Disinfection has been carried out by the Sanitary Inspector as necessary in houses after a death, or change of address of a person suffering from pulmonary tuberculosis. Bedding and clothing have been removed and disinfected also and attention has been given to overcrowding and sanitary defects.

Notifications.—622 notifications were received during the year, but some were duplicates, so that the total number of new cases was 584, of whom 449 were certified to be suffering from "pulmonary" and 135 from "non-pulmonary" tuberculosis. This is the lowest number of notifications ever received in a year in the City.

The details as regards sex and age are given in the accompanying table :—

SUMMARY OF NOTIFICATIONS DURING THE PERIOD, 1ST JANUARY TO
31ST DECEMBER, 1936.

(THE PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.)

AGE PERIODS.	Primary Notifications.												Total Notifications (including Cases previously notified by other doctors).
	0 to 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 and up- wards.	TOTAL.	
Pulmonary—													
Males.....	....	8	9	8	27	29	51	40	36	31	8	247	263
Females .....	....	8	12	8	30	45	42	34	11	8	4	202	214
Non-Pulmonary--													
Males.....	1	17	11	11	9	5	5	4	....	2	2	67	71
Females .....	....	14	10	11	5	5	6	7	2	5	3	68	74
TOTALS	1	47	42	38	71	84	104	85	49	46	17	584	622

As far as possible every notified case is visited by the nurses and urged to visit the Dispensary for examination and classification with a view to treatment.

Of the 584 cases notified, 497 attended the Dispensary and 32 others were visited in their homes by the Health Visitors in the course of the year. The names of the patients certified to have died from tuberculosis, but not previously notified, are entered in the notification register, so that if the 29 patients in this category, and 21 who died within one week of notification and were not known to the Dispensary be deducted, it will be seen that the Dispensary gets into touch with nearly all of the known cases of tuberculosis. The only cases not known to the Dispensary were five who were living in institutions or refused to be visited.

A table has been prepared to illustrate these points and also to show the nature of the institutional treatment afforded to the cases notified during 1936. 313 of the 449 patients notified as suffering from pulmonary tuberculosis were treated in beds belonging to, or controlled by the City Council, and 66 out of a total of 135 patients notified as suffering from forms of tuberculosis other than pulmonary were treated in such beds.

The number of patients dying in the year of notification is also given, and it will be seen that 146 (equal to 25 per cent.) of all the new cases died in the same year as they were notified.

NOTIFICATIONS OF TUBERCULOSIS DURING 1936.

Part Affected.	Notifi- cations.	Attended Dispensary	Visited by Nurse but not attended Dispensary.	Received Institutional Treatment.					Died during the Year.
				Barras- ford Sana- torium.	Sanat- orium Pav. Walker Gate.	Stann- ington Sana- torium.	New- castle Gen. Hosp.	Totals.	
Pulmonary—									
Male	247	218	9	52	116	4	....	172	64
Female	202	173	17	39	96	6	....	141	46
Non-Pulmonary--									
Male	67	52	4	....	....	5	33	38	15
Female	68	54	2	....	....	3	25	28	21
TOTALS	584	497	32	91	212	18	58	379	146

Cases re-admitted to the Sanatorium Pavilions, Walker Gate, and those transferred to Barrasford Sanatorium during the year are counted as only receiving treatment on one occasion.

During the year 205 cases (35.1 per cent. of the total) were notified by the Dispensary Medical Staff.

Practitioners were written to by the Medical Officer of Health when notification appeared to have been neglected.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.

NUMBER OF CASES OF TUBERCULOSIS REMAINING ON THE NOTIFICATION REGISTER AT THE END OF YEAR.

Year.	PULMONARY.			NON-PULMONARY.			Total Cases.
	Males.	Females.	Total.	Males.	Females.	Total.	
1925.....	855	608	1,463	340	312	652	2,115
1926.....	744	515	1,259	297	263	560	1,819
1927.....	644	441	1,085	236	204	440	1,525
1928.....	720	443	1,163	294	254	548	1,711
1929.....	744	501	1,245	319	270	589	1,834
1930.....	737	495	1,232	316	264	580	1,812
1931.....	767	501	1,268	298	251	549	1,817
1932.....	801	513	1,314	292	240	532	1,846
1933.....	795	531	1,326	294	270	564	1,890
1934.....	792	538	1,330	292	237	529	1,859
1935.....	799	569	1,368	283	236	519	1,887
1936.....	776	598	1,374	267	217	484	1,858

Deaths.—There were 308 deaths from tuberculosis of Newcastle-upon-Tyne residents. 265 pulmonary and 43 non-pulmonary, giving a death rate per 1,000 population—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	265	0.90
Non-Pulmonary	43	0.14
All forms of Tuberculosis	308	1.04

Page 37A in the Report of the Medical Officer of Health gives further particulars of deaths from tuberculosis.

Of the 265 persons who died from pulmonary tuberculosis 90.0 per cent. were known to the Dispensary staff, 220 having visited the Dispensary and an additional 18 having been attended in their homes by the visiting nurses.

41.9 per cent. of the persons who died from “ non-pulmonary ” tuberculosis were attended at or from the Dispensary. This is much lower than the pulmonary cases ; the main reason being that 30.2 per cent. of the non-pulmonary cases were not notified before death.

Of 265 deaths from pulmonary tuberculosis the diagnosis was verified bacteriologically in 189 instances, *i.e.*, 71.3 per cent.

Six other Dispensary patients who were known to be suffering from pulmonary tuberculosis, and in whose sputum tubercle bacilli had been found, died during the year. The cause of death being registered as : bronchitis and myocardial degeneration, 1 ; broncho pneumonia, 1 ; renal calculus, 1 ; miliary tuberculosis, 1 ; cardiac disease, 2.

Duration of Illness.—Whenever possible, in pulmonary cases, enquiry was made as to the length of time the deceased had been ill, and the average duration of illness was found to be 46.5 months. As in previous years, important differences were discovered when age and sex were considered, the figures being 54.7 months for adult males, 37.6 months for adult females and 21.4 months for those below 15 years of age (both sexes).

The period between notification and death was, as one would expect, longer in the adult males than in the adult females and children, but averaged 33.6 months for all cases.

29.4 per cent. of the patients had either not been notified prior to death (5.6 per cent.) or died within 3 months of notification (23.8 per cent.)

Further details and comparative figures for previous years are submitted in the following table :—

RETURN OF DEATHS FROM PULMONARY TUBERCULOSIS OCCURRING IN :—

	Deaths which occurred in these years.										
	Average for 1913-17.	Average for 1918-22.	Average for 1923-27.	Average for 1928-32.	1933	1934	1935	1936.			
								M.	F.	CHD	Total
Persons not notified	43	51	33	23	17	25	8	12	3	...	15
„ notified under 1 mth.	35	47	50	38	29	33	23	16	10	3	29
„ between 1 and 3 „	94	48	44	45	24	22	27	15	16	4	35
„ between 3 and 6 „	53	30	38	36	26	36	30	15	6	1	22
Total under 6 months ..	226	183	166	140	96	116	88	58	35	8	101
Persons notified between—											
6 and 12 months ..	47	46	40	36	31	32	22	13	15	1	29
„ 12 and 18 „ ..	28	21	25	22	27	18	24	8	11	...	19
„ 18 and 24 „ ..	15	15	17	17	17	15	16	8	6	...	14
„ 2 and 3 years	20	18	22	21	25	24	25	7	10	1	18
„ over 3 years	21	47	53	59	66	75	65	56	26	2	84
TOTALS	357	331	324	296	262	280	240	150	103	12	265

The figures for non-pulmonary forms of tuberculosis show that in 13 instances out of 43 deaths, the disease had not been notified prior to death ; 9 of the 15 fatal unnotified cases of pulmonary tuberculosis, and 12 of the 13 fatal unnotified cases of non-pulmonary tuberculosis, died in hospitals ; included in the 12 “ other forms ” were 6 cases of tuberculosis meningitis.

Family History.—In 98 instances amongst the 247 cases of pulmonary tuberculosis known to the Dispensary who had died during the year, *i.e.*, in 39.7 per cent., there was a history that some near relation was suffering from, or had died of pulmonary tuberculosis. The figures were 39.3 per cent. for males and 40.2 cent. for females.

House Accommodation.—The home conditions of the people are intimately associated with tuberculosis. The numbers of rooms in the dwellings occupied by the above 247 persons were as follows :—

Rooms in Dwelling.	1	2	3	4	More than 4	Common Lodging Houses.	Not Known.	Total.
Deaths	16	55	72	63	28	5	8	247

As regards the type of house occupied, 112 were flats, 55 tenements, 67 self-contained, 5 were common lodging houses, and in 8 cases the particulars were not known.

It is noteworthy that of the 229 patients suffering from pulmonary tuberculosis who attended the Dispensary and died in 1936, 210, or 91 per cent., had received institutional treatment, on one or more occasions. This is a high percentage and shows what a large proportion of the cases visiting the Dispensary avail themselves of the accommodation provided.

Tuberculosis and Pregnancy.—From the 1st January, 1924, to the 31st December, 1936, 88 women, who had had tubercle bacilli in their sputum and were attending the Dispensary, became pregnant and each gave birth to a child. Their classification, in the terms of the Ministry of Health grouping, at the time they were entered upon the Dispensary Register was :—T.B. positive, Group 1. 12 ; Group 2. 56 ; and Group 3. 20. At the time of confinement 37 were “disease arrested,” none of whom have relapsed or died as a result of the confinement. 36 of the women had a family history of tuberculosis.

2 of the children were premature and died at birth and 1 was stillborn. 16 are now known to be dead and 5 were certified to be due to some form of tuberculosis.

14 of these patients cannot now be traced because they have moved into other districts. This can be understood because the investigation dates back 12 years and on this account no further useful statistics about the matter can be obtained.

From this it will be seen that there has been only a very small number of tuberculous women known to the Dispensary, who have given birth to children. In 1935, out of 4,666 births in the City only 4 were known to be complicated by tuberculosis. This figure appears to be very low, but it compares with that of the London County Council Hospitals where, out of 13,000 annual confinements, only 20 or 30 are those of tuberculous mothers (*British Medical Journal*, 17th October, 1936, page 766).

INSTITUTIONAL TREATMENT.

Approximately 76 beds were provided at Barrasford Sanatorium for Newcastle-upon-Tyne patients suffering from pulmonary tuberculosis and 136 hospital beds at the Sanatorium Pavilions, City Hospital for Infectious Diseases, Walker Gate ; 60 beds at Newcastle General Hospital for the treatment of non-pulmonary tuberculosis, and 30 beds at Stannington Sanatorium for children for both surgical and medical cases.

Barrasford Sanatorium.—The report of the Medical Superintendent of Barrasford Sanatorium, which will be found under a separate heading, contains details and statistics of Newcastle patients treated in that Institution.

Sanatorium Pavilions, City Hospital, Walker Gate.—459 patients were admitted (274 males and 185 females) and included 57 transferred from Newcastle General Hospital who were found to be suffering from pulmonary tuberculosis.

Details of the number of patients admitted and discharged are given in the accompanying table :—

PATIENTS WHO RECEIVED TREATMENT IN THE SANATORIUM PAVILIONS,
WALKER GATE, DURING THE YEAR 1936.

		Sex	In Institu- tion on 1st January, 1936.	Ad- mitted during the Year.	Dis- charged during the Year.	Died in Institu- tion during the Year.	In Institu- tion on 31st Dec., 1936.
Number of Patients.	Adults	M.	53	210	176	54	33
	Do.	F.	21	124	93	27	25
	Children....	M.	3	8	10	1	....
	Do.	F.	9	9	15	3	....
Observation Cases.	Adults	M.	3	44	33	5	9
	Do.	F.	3	39	34	5	3
	Children....	M.	....	12	12	....	....
	Do.	F.	2	13	8	1	6
TOTALS.....	....	....	94	459	381	96	76

N.B.—37 patients were re-admitted and are counted as 74 admissions.

Of the 98 patients discharged who had been under observation 48 were found to be suffering from tuberculosis. The total number of days of those who received treatment was 39,562 giving an average length of stay as 89 days.

96 patients died in the Institution ; the conditions of the other patients on discharge is given in the table below :—

	Males.	Females.	Total.
Improved	192	112	304
Without Improvement	39	38	77
Died in Hospital	60	36	96
TOTALS	191	186	477

Many of those discharged "improved" were fit for light work; 29 were transferred to Barrasford Sanatorium and 1 to Stannington Sanatorium. 13 patients were sent to the Newcastle General Hospital for surgical treatment.

Treatment has been on Sanatorium lines, modified to some extent in view of the type of patient; the essentials are the same, however, namely, rest and good food under satisfactory hygienic conditions, with exercise graduated to the patient's tolerance.

X-ray Examinations.—During the year 1,659 thoracic films were taken. These included 991 Dispensary patients, 285 inmates of the Sanatorium Pavilions, 92 patients from the City Hospital for Infectious Diseases, 228 in connection with artificial pneumothorax treatment and 63 nurses and maids belonging to the staff of the Hospital. In addition, 1,450 routine screen examinations were made, 44 to out-patients and 1,406 in connection with the same number of artificial pneumothorux refills.

Artificial Pneumothorax.—There were 43 initial inductions of artificial pneumothorax and 1,406 refills performed at the Sanatorium Pavilions, City Hospital, Walker Gate, during the year. Since the year 1922, 400 patients have received this form of treatment.

Sanocrysin.—This was administered in 1 case.

Lipiodol has been used to assist with diagnosis when necessary.

NEWCASTLE GENERAL HOSPITAL.

117 patients were admitted (61 males and 56 females). Details are given in the following table :—

PATIENTS WHO RECEIVED TREATMENT IN NEWCASTLE GENERAL HOSPITAL DURING THE YEAR 1936.

	Sex	In Institu- tion on 1st Jan., 1936.	Ad- mitted.	Dis- charged.	Died in Institu- tion.	In Institu- tion on 31st Dec., 1936.
Pulmonary.... Adults	M.	4	3	6	1	....
Do. Do.	F.	....	4	2	....	2
Non-Pulmonary Do.	M.	18	33	29	9	13
Do. Do.	F.	10	36	31	8	7
Do. Children	M.	19	25	20	7	17
Do. Do.	F.	8	16	15	5	4
TOTALS.....		59	117	103	30	43

5 patients were re-admitted and are counted as 10 admissions.

1 patient was ,, twice ,, is ,, 3 ,,

The results of the treatment received are given in the table below :—

	Males.	Females.	Children.	Totals.
Improved	33	19	32	84
Without Improvement	2	14	3	19
Died in Hospital	10	8	12	30
TOTALS	45	41	47	133

The total number of days of those who received treatment was 30,825, giving an average length of stay of 232 days.

Thoracic Surgery.—The Thoracic Surgeon at Newcastle General Hospital has continued to operate upon suitable cases. Whenever necessary he has visited the Sanatorium Pavilions, City Hospital, Walker Gate, and seen patients, in consultation with the Tuberculosis Medical Officer, that were thought likely to benefit by operative procedure.

Two cases of artificial pneumothorax had cauterisation of adhesions performed ; three cases of bronchiectasis had a lobectomy carried out, one case of pulmonary tuberculosis had a thoracoplasty done, and two phrenic evulsions have been carried out.

STANNINGTON CHILDREN'S SANATORIUM.

The 30 beds maintained in this Institution for the treatment of Newcastle-upon-Tyne patients were kept fully occupied throughout the year and 55 children completed treatment. The details appear below :—

CHILDREN WHO RECEIVED TREATMENT IN STANNINGTON SANATORIUM DURING YEAR 1936.

	In Sana- torium on 1st Jan., 1936.	Ad- mitted during the Year.	Persons who completed Treatment during the year.			In Sana- torium on 31st Dec., 1936.
			Number	Total Number of Days.	Average length of stay in Days.	
Pulmonary Males	8	12	12	3,247	271	8
Do. Females	7	13	9	1,679	186	11
Non-Pulm. Males	5	16	15	1,764	118	6
Do. Females	10	14	19	4,410	232	5
TOTALS.....	30	55	55	11,100	202	30

In every case except four benefit accrued to the patient, as is shown in the following returns :—

	Males.	Females.	Total.
Disease quiescent	7	9	16
Improved	18	17	35
Without Improvement	2	2	4
TOTALS	27	28	55

No action has been taken under the Public Health Act of 1925 (compulsory removal of patients to hospital) or under the Public Health Prevention of Tuberculosis Regulations, 1925, dealing with milk.

I wish to acknowledge the loyal support and interest of my staff.

Yours faithfully,

GEORGE HURRELL, M.D., D.P.H.,

Tuberculosis Medical Officer.

Tuberculosis Dispensary,

91, New Bridge Street,

Newcastle upon Tyne, 2,

19th April, 1937.

BARRASFORD SANATORIUM.

Report of the Medical Superintendent.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit a report on the work at Barrasford Sanatorium during the year 1936.

General.—The optimum number of patients accommodated remains at 95, with which number a few single rooms are available on the ground floor for sick patients.

This number of beds is in excess of those required for Newcastle alone, and some of the surplus beds are rented to neighbouring local authorities as follows :—

Gateshead Corporation	10 beds for male cases.
West Hartlepool Corporation ...	6 beds—3 for each sex.
Tynemouth Corporation.....	2 beds for female cases.

Early in the year Dr. Hazel Ashford resigned from the post of assistant medical officer, after approximately a year's service, and was succeeded by Dr. D. Cohen.

During the year the usual yearly sum was expended on painting—this time most of it was devoted to internal decoration, and a smaller amount to roofs.

Further development of the grounds was carried out, and the improved appearances reflect considerable credit on the work of the gardener (Mr. J. Henderson) and his staff.

Another length of road was macadamised, and progress in this direction is being made, though there is still much road work to be done

In the laundry the old ironing callender was replaced by a new machine, which was urgently needed. It is essential now to consider the replacement of the other two machines—the washing machine and the hydro extractor, both of which go back to the first days of the Sanatorium, that is 1907.

X-ray Plant.—Each patient has had a radiograph taken on admission to the Sanatorium and during treatment when it seemed that useful information would be produced by further films. During the year 270 films were completed and the interpretations entered up in the patients' notes. All artificial pneumothorax cases are "screened" as a routine, and the screenings numbered 685, and the appearances were reproduced by diagram in the patients' records.

Dental Clinic.—The majority of patients have some carious teeth, and a smaller number have such a number decayed, together with infected gums, as to be incompatible with good health. An attempt is made to improve the state of the mouth in all cases in which the above conditions are present. Clinics are held each fortnight, when treatment is in the hands of Mr. G. Hutchinson, L.D.S.

During 1936 the following work was completed :—

Extractions	247
Fillings	68
Temporary fillings	19
Scalings	37
Attention to dentures.....	4
Examinations	10

The total attendances numbered 308.

Occupational Therapy.—No change has been made in this phase of sanatorium routine, which is of the greatest value to the person undergoing a treatment which is often prolonged, and from the very nature of the surroundings apt to be tedious and monotonous, especially to town dwellers. Occupational therapy offers to patients something practical and constructive, to occupy some of their time. It is applicable both to the more robust type of patient who has completed the long walks, and those who through their disability are unable to walk far and on whose hands time is likely to hang heavily.

It is divided into two main types, the one is the following of crafts, and the other is woodwork combined with suitable sorts of estate work. The former is carried out in workshops where the patients are instructed by a handicrafts instructor (Mr. J. A. Caughey). The crafts are leather, raffia and cane work, rug and basket making, poker work, and the making of other articles requiring concentration and care.

The standard of the finished articles is remarkably good, and the bulk of the goods made are sold and there is very little wastage of material. The attendances numbered 5,460; the women worked 5,274 hours and the men 5,646.

The woodworking section is housed in a separate workshop under the control of the joiner (Mr. F. C. Gerdes). Men only are employed, and as far as possible patients who normally earn their livings by the use of tools are given the opportunity of keeping in practice whilst under treatment. Here suitable woodwork is undertaken, and patients also are able to help in repairs and improvements about the estate.

In addition, men patients assist the gardener in suitable weather, in the maintenance and development of the garden and grounds.

Admissions.—The total number of cases admitted to the Sanatorium during the year was 192, three less than in the previous year. The number of Newcastle admissions was 144, as against 145 in 1935. Gateshead Corporation had 28, Tynemouth Corporation had 4, and West Hartlepool Corporation had 16. There were no admissions of private cases.

So far as Newcastle cases are concerned, there is rarely any delay in admission; a patient is usually in the Sanatorium within a week after the receipt of his application form. In the cases of the outside authorities who have a fixed number of beds and therefore often a waiting list, there is occasionally delay in admission.

Of the 192 admitted cases, 20 had been in the Sanatorium previously, and were disposed as follows :—

1 case had been admitted twice previously.....in	1929 and 1930
1 " " " " " " " "	in 1933 and 1934
1 of the re-admitted cases was first admitted in.....	1909
1 " " " " " " "	.....1920
1 " " " " " " "	.....1923
1 " " " " " " "	.....1924
2 " " " were " " "	.....1927
1 " " " was " " "	.....1931
4 " " " were " " "	.....1933
5 " " " " " " "	.....1934
2 " " " " " " "	.....1935

Of these 20 re-admitted cases, 17 had had at some time or other tubercle bacilli demonstrated in the sputum, and in three cases tubercle bacilli had never been seen.

ADMISSIONS TO THE SANATORIUM DURING 1936.

Authority.	Male.	Female.	Total.
Newcastle Corporation	90	54	144
Gateshead Corporation	28	....	28
Tynemouth Corporation	1	3	4
West Hartlepool Corporation	11	5	16
	130	62	192
During 1935.....	123	72	195
During 1934.....	104	54	158
During 1933.....	108	51	159
During 1932.....	114	54	168
During 1931.....	125	60	185
During 1930.....	121	65	186
During 1929.....	124	54	178

NOTE.—Figures relating to the years 1921-1928 are given in the Report for the year 1932.

Discharges.—There were 190 discharges during 1936, as compared with 205 in 1935. No case died in the Sanatorium during the year. There were no summary dismissals during the year, and the total of these is only seven since 1921 when the Corporation acquired the Sanatorium.

DISCHARGES FROM THE SANATORIUM DURING 1936.

Authority.	Male.	Female.	Total.
Newcastle Corporation	85	59	144
Gateshead Corporation	27	....	27
Tynemouth Corporation	1	3	4
West Hartlepool Corporation	11	4	15
	124	66	190
During 1935.....	137	68	205
During 1934.....	97	47	144
During 1933.....	108	57	165
During 1932.....	111	60	171
During 1931.....	124	60	184
During 1930.....	131	59	190
During 1929.....	115	54	169

NOTE.—Figures relating to the years 1921-1928 are given in the Report for the year 1932.

SUMMARY OF MOVEMENTS OF PATIENTS DURING 1936.

Authority.	In residence night of Dec. 31st, 1935.	Admitted during 1936.	Discharged during 1936.	In residence night of Dec. 31st, 1936.
Newcastle Corporation	59	144	144	59
Gateshead Corporation	9	28	27	10
Tynemouth Corporation	2	4	4	2
West Hartlepool Corporation	5	16	15	6
	75	192	190	77

Details in connection with Discharged Cases.

The particulars of patients and the results of their treatment, which are set out later, are based on the completed cases discharged. Of these 190, 17 exhibited no definite signs or symptoms of clinical tuberculosis, and were discharged as soon as this fact was established, and are excluded from the particulars and results of treatment which follow. The details (*c* to *f*) are, therefore, based on the 173 cases of definite tuberculosis.

(a) Length of stay—

The average duration of treatment of all cases was 149.53 days.
 Excluding the 17 non-tuberculous cases, 157.18 days.
 The 144 Newcastle cases alone averaged 168.82 days.
 The longest stay was 408 days, the shortest 5 days.

(b) Beds occupied and patient days—

Average number of beds occupied, 85.63. 52.06 by males, and 33.57 by females.
 Total number of patient days was 31,340. 19,053 male, and 12,287 female.

Below is given an analysis of the average number of beds occupied, and the number of patient days.

Authority.	Average Beds occupied daily.	Patient Days.
Newcastle Corporation	67.98	24,882
Gateshead Corporation	9.94	3,641
Tynemouth Corporation.....	1.97	724
West Hartlepool Corporation	5.71	2,093

(c) *Social Status—*

	Male.	Female.	Total.
Single	51	45	96
Married	57	16	73
Widowers.....	2	....	2
Widows .....	....	2	2
TOTAL	110	63	173

(d) *Age—*

Years.	Male.	Female.	Total.
16-20	20	9	29
20-25	18	19	37
25-30	17	13	30
30-35	19	11	30
35-40	10	4	14
40-45	10	2	12
45-50	6	4	10
50-55	5	1	6
55-60	2	....	2
60-65	3	....	3
TOTAL	110	63	173

(e) *Occupations of 110 Male Patients—*

Labourers	19
Engineering and metal workers.....	7
Clerks	7
Motor drivers and mechanics.....	5
Salesmen	5
Miners	4
Joiners	4
Blacksmiths and Blacksmiths' strikers.....	3
Post office workers (outside).....	3
Grocers	2
Railway workers (outside)	2
Railway workers (inside).....	1
Electricians	2
Commercial travellers	2
Barmen	2
Riveters	2
Ex-Naval ratings	2
Warehousemen	2

and one each of the following :—seaman, draughtsman, machinist, despatch hand, watch repairer, hawker, holder-up, message boy, caterer, hotel porter, butcher, rigger, gas fitter, schoolboy, cabinet

maker, mason, mineral water worker, hospital porter, painter, paper maker, insurance official, aircraft fitter, moulder, fruiterer, bus conductor, bricklayer, cook, boot repairer, van boy, office boy, upholsterer, paint mixer, window dresser, typewriter mechanic, electric welder, and one had no occupation. Total 110.

(f) *Occupations of 63 Female Patients—*

Housewives	16
Shop assistants	7
Housework at home.....	7
Clerks and typists.....	6
Domestic servants	5
Machinists	3
Factory workers	2
Nurses	2
Dressmakers	2

and one each of the following :—tailoress, tobacco stripper, cashier, laundress, theatre attendant, waitress, box maker, bakeress, paper bag maker, barmaid, office cleaner, dancing pupil, saleswoman. Total 63.

Diagnosis.

The diagnosis of pulmonary tuberculosis was confirmed bacteriologically either before admission or during residence in 117 cases (74 males and 43 females). 45 patients (34 males and 11 females) were apparently without tubercle bacilli in the sputum, and 11 patients (2 males and 9 females) said they had no expectoration ; making 56 cases of tuberculosis in whose sputa tubercle bacilli had never been demonstrated. The clinical findings in all sputum negative cases can be divided as follows :—

Not suffering from clinical tuberculosis	17
Definite pleural tuberculosis without evidence of lung tuberculosis	18
Definite physical signs and X-ray evidence of lung tuberculosis without demonstrable bacilli.....	38

In the cases of the 38 patients in the last group, the radiographs all showed appearances suggesting the presence of deposit in the pulmonary situation for which tuberculosis shows a predilection. 237 sputum examinations were made in connection with these 38 cases, and as 9 had no sputum the average examinations in those that had was 8 each. 1,504 sputum examinations were made at the Sanatorium during the year ; of these 474 were positive as

regards the presence of tubercle bacilli, and 1,030 were negative. 959 complete examinations of the chest were made during the year, together with routine examinations of the larynx and urine on admission of the patient, and subsequently when necessary.

During the year 17 cases were discharged as not suffering from pulmonary tuberculosis, and the diagnosis in these cases were as follows :—

Bronchiectasis	4
No pathological condition detected.....	4
Chronic inflammatory lesion.....	3
Spontaneous pneumothorax	3
Chronic nephritis.....	1
Hernia of stomach into pleural space	1
Diagnosis not established—sent to Hospital	1

These 17 non-tuberculous cases were included in the 20 patients sent for observation for the purpose of making a diagnosis. Three were found to be suffering from pleural tuberculosis.

The period of observation for the purpose of diagnosis is set out below :—

	Under 1 week.		1 to 2 weeks.		2 to 4 weeks.		More than 4 weeks.	
	M.	F.	M.	F.	M.	F.	M.	F.
Tuberculous .....	....	....	1	....	1	1	....	....
Non-tuberculous	5	....	3	....	4	1	2	2

Lipiodol was employed when necessary in diagnosis, and 4 lipiodol bronchograms were produced, all of which showed the characteristic appearances of bronchiectasis.

Treatment.

Rest, diet, graduated exercise going on to occupation, are the points regarded as most important in routine treatment. It is essential, however, on admission and subsequently, to be certain that the bodily temperature is ranging normally. Unless there is any cause other than lung tuberculosis, a raised temperature is usually an indication of active disease, and rest in bed is essential until it has been reduced by bedrest alone or in conjunction with some form of special treatment.

93 of the 173 definite cases of tuberculosis were found to have normal temperatures during the whole of their residence, whilst 80 patients were feverish at some time or other of their treatment in the Sanatorium.

Afebrile throughout Treatment.	Febrile on Admission, Afebrile on Discharge.	Febrile Intermittently.	Febrile throughout Treatment.	Afebrile on Admission, Febrile on Discharge.
93	40	11	24	5

Lung collapse or artificial pneumothorax was used to a considerable extent as in previous years. It continues to give effective results in a large group of cases, which would probably not be attained by any other means. It controls symptoms and restores working capacity in successful cases, and is by far the most useful and widely used form of special treatment at the command of the tuberculosis worker. The rest provided by successful lung collapse allows stable healing to occur if the treatment is kept up sufficiently long.

39 of the 173 cases discharged in 1936 were considered to be suitable for treatment by lung collapse, but in 10 of them changes in the chest in the course of the disease on the chosen side, prevented the treatment from being carried out.

Of the 29 discharged cases treated, 10 were right sided and 18 were left and one was a simultaneous bilateral case. In addition to these, 14 cases had had an artificial pneumothorax induced before admission, bringing the number treated during the year to 43 (17 right, 25 left and 1 bilateral).

In connection with the above cases, all of whom were discharged during the year, 553 insufflations of air were performed, whilst during the year the total number of such operations was 685.

In 26 cases the induction of lung collapse seemed to be effective in controlling symptoms, 16 of them losing tubercle bacilli previously present in the sputum. In the remaining 17 the procedure was ineffective and was abandoned—in 3 cases only on account of effusion of fluid.

On discharge, the lung collapse is maintained by the Tuberculosis Medical Officer in most cases.

Since 1922, 446 cases have been treated by lung collapse at Barrasford, exclusive of those cases where it was induced before admission, which total 82.

Gold Salts.—Following on the unfavourable or valueless results in the use of gold salts in previous years, its employment has now been discontinued at the Sanatorium.

Ultra Violet Radiation.—No case was treated by ultra violet radiation during the year.

Results of Treatment.

The problem in the treatment of pulmonary tuberculosis is the case with tubercle bacilli in the sputum. The case of tuberculosis whose lung damage is represented by a pleurisy with fluid, or minimal lung involvement without bacilli in the sputum, almost invariably does well, provided an adequate period of treatment is accepted and commonsense management of activities for 1 to 2 years afterwards.

But the sputum T.B. positive case is different, and the most significant criterion of improvement is the sustained abolition of sputum.

The case which, better in every other aspect, still has tubercle bacilli in the sputum at the end of treatment, is still a potential source of danger to others and himself, and it is probably true to say that relapse occurs sooner or later.

31 of the 117 discharged patients lost their bacilli during treatment. A case is regarded as T.B. negative who has had absence of sputum for a month, or where serial examinations of sputum have been negative for at least this period.

During the year the estimation of the blood sedimentation rate was carried out as a routine, being done monthly in every case. The Westergren method, employing a 200 m.m. tube, has been used, and during the year 1,112 estimations were made and recorded.

The following are the weight records of the 173 definite cases of tuberculosis and the 17 non-tuberculous cases.

		Gained up to 7 lbs.	Gained 7 to 14 lbs.	Gained over 14 lbs.	Remained station- ary.	Lost up to 7 lbs.	Lost over 7 lbs.	Not weighed on dis- charge.	TOTAL.
173 definite cases.	{ Gained weight...	55	62	33	....	....	....	....	150
	{ Lost weight .....	....	....	....	....	12	5	....	17
	{ Stationary .....	....	....	....	4	....	....	....	4
	{ Not weighed on discharge .....	....	....	....	....	....	....	2	2
	Total	55	62	33	4	12	5	2	173
17 non- tuber- culous cases.	{ Gained weight...	7	6	2	....	....	....	....	15
	{ Lost weight .....	....	....	....	....	....	....	....	....
	{ Stationary .....	....	....	....	1	....	....	....	1
	{ Not weighed on discharge .....	....	....	....	....	....	....	1	1
	Total	7	6	2	1	....	....	1	17

Under the classification of cases introduced by the Ministry of Health, patients suffering from pulmonary tuberculosis are divided into :—

Class T.B. Minus, or those cases in which tubercle bacilli have never been demonstrated in the sputum, and,

Class T.B. Plus, viz., cases in which tubercle bacilli have at any time been found.

The latter class is further divided into three groups :—

Group 1.—Cases with slight constitutional disturbance, if any, and in which the obvious physical signs are of very limited extent.

Group 3.—Cases with profound systemic disturbance or constitutional deterioration, with marked impairment of function, and with little or no prospect of recovery.

Group 2.—All cases which cannot be placed in Groups 1 or 3.

To indicate results of treatment, the following terms are laid down :—

“Quiescent.”—Cases which have no symptoms of tuberculosis and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in which the sputum, if present, is free from tubercle bacilli.

“Arrested.”—In pulmonary cases the term should be applied only to cases which have been “quiescent” for a period of at least 2 years.

“Improved.”—Cases short of “quiescent,” in which the general health is fair and the symptoms of tuberculosis have materially diminished.

“No Material Improvement.”—All other patients who are alive.

When considered in these terms, the results of treatment of the 173 cases of lung or pleural tuberculosis can be set out as follows :—

T.B. Minus.				
		M.	F.	Total.
Quiescent		19	7	36
Improved		12	8	20
No Material Improvement..		5	5	10
T.B. Plus.				
		M.	F.	Total.
G.1	{ Quiescent	1	1	2
	{ Improved	1	1	2
	{ No Material Improvement..	1	....	1
G.2	{ Quiescent	1	....	1
	{ Improved	31	29	60
	{ No Material Improvement..	17	8	25
G.3	{ Quiescent .....	....	....	....
	{ Improved	3	....	3
	{ No Material Improvement..	19	4	23

The number of T.B. minus cases which improved to the stage of quiescence is made up of cases of pleural tuberculosis which had no evidence of disease in the lung itself.

It is pleasing to record the great assistance rendered by Dr. Cohen in the clinical work, and to acknowledge the administrative efficiency and help of the Matron (Miss F. Baguley, A.R.R.C.) The loyalty and work of the rest of the staff, both nursing and lay, is very much appreciated.

Yours faithfully,

CECIL G. R. GOODWIN, L.R.C.P., M.R.C.S.,

Medical Superintendent.

Barrasford Sanatorium,

Northumberland,

25th March, 1937.

**REPORT OF THE
MEDICAL SUPERINTENDENT,
NEWCASTLE GENERAL HOSPITAL.**

**V.—GENERAL DISEASES
HOME AND HOSPITAL.**

**DOMICILIARY MEDICAL SERVICE,
NEWCASTLE GENERAL HOSPITAL.**

DOMICILIARY MEDICAL SERVICES.

This work was originally carried on by District Medical Officers, each of whom was in charge of a specified district in the City, and gave both medical attendance and medicines. These officers were remunerated by the payment of a salary and bonus.

By resolution of the City Council dated 20th September, 1933, an "open choice" method for the provision of Domiciliary Medical Services was introduced into six of the Medical Relief Districts as from 8th November, 1933.

During the year a further district was added to the seven already in the scheme, and the eight districts are now designated the Joint Medical Relief District.

It is proposed to add to the Joint Medical Relief District any other districts which may become vacant.

Domiciliary Medical Services in the Joint Medical Relief District are given by a panel of medical practitioners who have contracted with the City Council to provide the required services. Medicines, etc., for patients in the area of the Joint Medical Relief District are supplied from two municipal dispensaries which have been established at the Newcastle General Hospital and the Newcastle Dispensary, New Bridge Street.

A report on the working of the Scheme during the period 1st March 1935—29th February 1936, is included in this report (Appendix B).

The following table gives particulars of the work carried out during 1936 of the remaining District Medical Officers whose areas are not included in the Joint Medical Relief District.

District No.	District Medical Officer.	Number of Cases Treated.	Attendances by the M.O. at the Homes of the Patients.	Attendances by the Patients at the M.O.'s Surgery.
7	Dr. W. Simpson	*173	233	125
8	Dr. R. W. Nevin.....	2,591	2,863	3,705
10	Dr. T. J. Ryan.....	1,379	3,988	6,156

*Resigned, figures relate to the period 1st January—1st February, 1936.

NEWCASTLE GENERAL HOSPITAL.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

It affords me much pleasure to submit for your consideration this report on the year's work in the **Newcastle General Hospital**.

Again I have to report an increased activity in all departments of the Hospital, the admissions having increased by 462 and the discharges by 480. It will be again noted that the increase has been due to the larger number of female patients and children admitted, the number of male patients admitted being only slightly greater than during the previous year. This has necessitated putting up extra beds in every ward. It clearly indicates the absolute necessity of increased accommodation. I have found it necessary to refuse immediate admission in the case of paying patients and it has also been found necessary to discontinue the admission of patients requiring dental treatment.

During the year 2,908 letters were sent out to doctors, of these 1,043 referred to medical cases and 1,865 to surgical. This service is much appreciated by medical practitioners.

The Sunday Morning Lectures were continued during the Spring and Summer months, the attendance at these being fairly well maintained. It was decided that during the Winter months when the general practitioners were likely to be busy and the weather stormy it might be advisable to discontinue them.

The course of lectures and demonstrations for undergraduates started in 1935 was continued, the average attendance being approximately 25. I consider that something of a more ambitious nature as regards clinical teaching could well be undertaken, with, I feel sure, benefit to the undergraduate.

We have had to deal with an increased number of cases of pulmonary tuberculosis, the large proportion of them having been admitted as suffering from some other disease. I think it is hardly realised how frequently the condition occurs in infants. The ready co-operation of the Tuberculosis Medical Officer has greatly facilitated the arrangements necessary in dealing with these patients.

A number of patients suffering from tuberculous phthisis have been treated by operation, these cases having been admitted from the City Hospital and the various surrounding Sanatoria, on the recommendation of the Tuberculosis Medical Officers.

There has been a great extension in the thoracic surgery work, but this the subject of a special report by Mr. Mason, so requires no further reference from me.

This year's work in the Maternity Ward has again been a record one, 388 cases having been dealt with, compared with 273 in 1935. The number of children born was 397. We were fortunate in having no untoward happening, and the medical and nursing staff dealing with this branch of the work are to be commended on the excellent results obtained. The number of beds available in the present Maternity Ward is quite inadequate, but extra accommodation has been found in D. Block, and, although far from being an ideal arrangement, has definitely eased the situation. If the number of cases this year (1937) is maintained at the present level 1936 will be easily exceeded. These facts all go to prove the urgent necessity of expediting the building of a new Maternity Ward.

The Mental Wards, formerly administered by the Public Assistance Committee, were taken over by the Health Committee, the change taking place on 1st November, 1936. I have advocated this step for a number of years and am delighted that it has been accomplished. No difference should be made in dealing with the mentally sick and the physically sick. The new arrangement is working smoothly, and all concerned, patients, relatives and staff, appreciate the change.

The number of patients admitted was again high, only being 6 below 1935, which was a record year. It was found necessary to certify 30.4% of the males and 35.9% of the females, the remainder being discharged or transferred to other departments. A few cases were sent to the City Mental Hospital as voluntary patients.

Of the admissions to the Mental Wards 15% belonged to districts outside the City and were chiefly accounted for by admissions from the Royal Victoria Infirmary and to a smaller extent from the Princess Mary Maternity Hospital.

The incidence of infectious diseases was much lower than in the previous year, both as regards adults and children. Although sporadic cases of dysentery occurred it caused considerably less worry than it did in the previous year. The staff also was remarkably free from any trouble of an infectious nature.

The number of operations performed in the theatres was the same as in the previous year, viz. :—2,722, but there was an increase of 84 in the number of major operations, and a similar decrease in the number of dental cases.

I would like to make mention of the excellency of the work of the anæsthetists and the important part they play in the good results obtained in the serious surgical operations which are undertaken. The new methods of anæsthesia have made these operations possible, and, what is of the greatest importance, have reduced to a considerable extent the apprehension and dread felt by all patients to a greater or lesser degree. It has also made much easier the period immediately following the operation. Anæsthesia has really become a very specialised part of medicine. The appointment of a full time anæsthetist has proved of the greatest possible advantage and has been very much appreciated by the surgeons.

The number of patients admitted for treatment following miscarriage continues to increase, being 38 higher than last year.

The Shadowless Lamp installed in the main theatre has proved a great improvement on the old lighting.

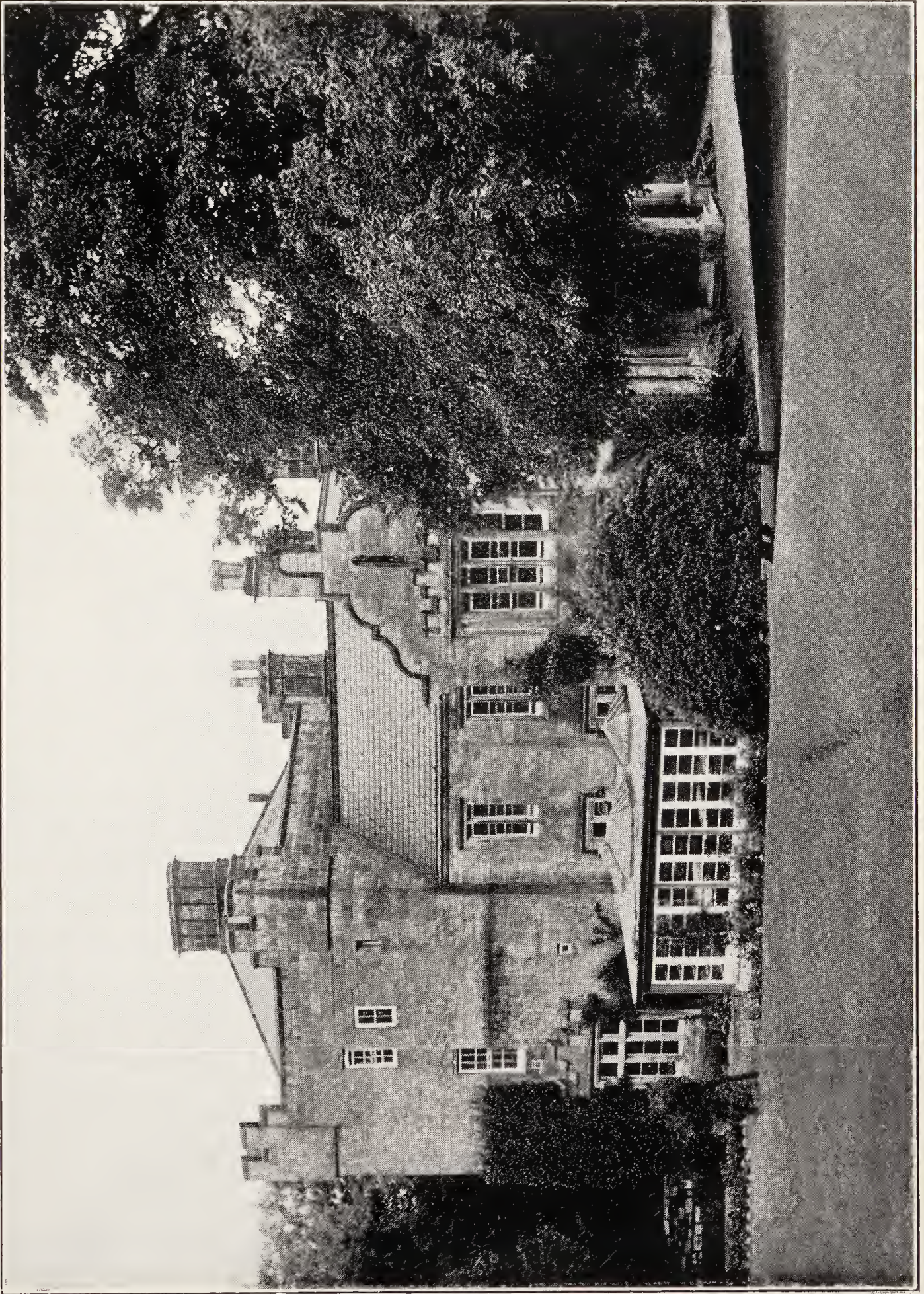
The work performed by Mr. Pattison, the Neurological Surgeon, has shown a marked increase, but this is the subject of special report so need not be further mentioned.

The arrangements for dealing with dental cases remains very unsatisfactory and this problem will have to be dealt with sooner or later. The system of admitting a limited number each week on Friday night for operation on the Saturday morning had practically to be discontinued from September on account of the lack of accommodation.

As a special report is being given by Dr. Nattrass and Mr. Evans on the work done in the radio-therm department it need not be referred to by me.

The admission of children again increased to the extent of 200 during the year. The incidence of specific infectious diseases was very low, but a large number of cases of gastro enteritis of a very severe type were admitted. No specific organism was isolated.

The new Children's Block in process of completion should prove a most valuable asset in the treatment of the children.



CONVALESCENT HOME FOR CHILDREN, ROTHBURY.

The Convalescent Home at Louisville was closed in July, up to which time 70 children had passed through. The new Home at Rothbury, Whitton Tower, was opened in July, children being admitted the following month. Up to the end of the year 36 cases had passed through, but it is fully expected that it will be possible to make full use of the accommodation during the summer months. A photograph of this Home is shewn on page 146A. The transport has caused a certain difficulty, but this has been overcome now, it is hoped.

The number of paying patients admitted for treatment continues to increase, as will be seen from the following returns for the last six years :—

1931	...	63	1934	...	170
1932	...	105	1935	...	218
1933	...	124	1936	...	308

This number could be very readily increased provided the accommodation were available, and again I would recommend considering the provision of accommodation of a private nature at an increased fee.

The Diabetic and Pernicious Anæmia Clinics continue to perform a useful part in the work of the Hospital. A special report is given by Dr. Swan on the work performed during the year.

As in other departments so has there been a great increase in the work done in the X-ray, Massage and Electrical departments. Treatments by massage have practically been doubled, this having been made possible by the appointment of a second masseuse.

The number of prescriptions dispensed for Domiciliary Medical Service patients was 28,746, an increase of 2,675, and the number of prescriptions dispensed for patients from the Diabetic Clinic was 744.

The number of cases admitted belonging to other districts, continues to increase, and, on the whole, less difficulty has been experienced in making the necessary arrangements, although even yet the procedure might be facilitated and expedited.

The number of nurses admitted to the sick wards was 46, one less than the previous year, and of these 7 were under treatment on more than one occasion. As is usually experienced, the most prevalent sickness was septic throat, and again it occurred usually in probationers during the early months of their training. Two nurses had to be transferred to Barrasford Sanatorium, one suffering from tuberculosis phthisis, and the other from pleurisy.

The former is now a patient in her home Sanatorium (Aberdeen), and appears to be making good progress. The other has made a good recovery and is now on duty. The following are the outstanding illnesses :—

Septic Throats	19	Septic Fingers	15
Quinsy	1	Tuberculous Phthisis ..	1
Acute Rheumatism	1	Tubercular Knee	1
Appendicitis	2	Pleurisy	1
Jaundice	2	Minor Injuries	5

The amount of special nursing involved, particularly in the case of surgical cases, has been a considerable tax on the Nursing staff, but the duties have been carried out without any question or complaint. An increase in the staff is urgently required and this necessitates the provision of additional accommodation.

The accommodation provided for the Resident Medical Staff calls for improvement, particularly as regards sitting rooms, these being very bare and uninteresting.

The Hospital has passed through a very strenuous year, still under difficulties, and I would like to place on record my appreciation of the good work done by all branches of the staff.

In concluding I would also express to you my thanks for the constant interest you have shown and the help you have given in all pertaining to the administration of Newcastle General Hospital.

ADMISSIONS AND DISCHARGES, ETC., FOR THE YEAR
ENDED 31ST DECEMBER, 1936.

	<i>Males.</i>	<i>Females.</i>	<i>Children.</i>	<i>Total.</i>
Admissions	2,281	2,928	1,498	6,707
Discharges	2,304	2,912	1,479	6,695
Of the Discharges—Cured			1,649	
Relieved.....			4,001	
Died.....			1,045	
			<hr/>	
		Total.....	6,695	<hr/> <hr/>

(There were also 28 deaths in the Elswick Grange.)

TABLE OF AGES OF PATIENTS TREATED.

Men over 60.....	753
Women over 60.....	597
Men under 60.....	1,551
Women under 60.....	2,315
Boys, 3-16.....	348
Girls, 3-16.....	325
Children under 3.....	806
	<hr/>
	6,695
	<hr/> <hr/>

TRANSFERS FROM OTHER HOSPITALS, HOMES AND
AUTHORITIES.

Royal Victoria Infirmary	49 + 6*
Gateshead County Borough	7
Gateshead P.A.C.....	14 + 1†
Gateshead Tuberculosis Care Committee	9
Shotley Bridge Colony	4
South Shields	4
Prudhoe Hall Colony.....	1
Northumberland County Council.....	46 + 1‡
North Riding of Yorkshire	2
Durham County Council.....	60 + 2‡
Tynemouth County Borough.....	2 + 1†
Tynemouth P.A.C.	2
Sunderland P.A.C.	1
Stoke-on-Trent	1
West Hartlepool	4
Northallerton & District Hospital Assn.	1
PRIVATE CASES ADMITTED	308

INQUESTS HELD :—

Hospital cases (36); Elswick Grange cases (7) 43

* Observation ward cases, 3 of which are chargeable to other Institutions.

† „ „ case.

‡ „ „ cases (included in Royal Victoria Infirmary Nos.)

OPERATIONS

FOR YEAR ENDED 31ST DECEMBER, 1936.

Abdominal	576
Gynæcological	309
Thoracic	172
Orthopædic	149
Genito-Urinary	154
Nose, Throat, Ear and Eye.....	176
Blood Vessels	80
Rectum	5
Brain and Special Cases.....	106
Skin and Subcutaneous Tissues.....	438
Examination under anæsthetic	122
Amputations.....	17
Teeth	373
Plastic Cases.....	31
Radium Cases	2
Teeth extracted under local anæsthetic....	12

Total..... 2,722

Major Operations.....	1,551
Minor Operations.....	786
Teeth	385

2,722

RETURN OF CASES TREATED IN MASSAGE DEPARTMENT

	<i>Massage.</i>	<i>Medical Electricity.</i>	<i>Sunlight.</i>	<i>Total.</i>
Treatments	5,029	2,621	2,548	10,198

X-RAY DEPARTMENT.

Cases X-rayed.....	2,207	Exposures	3,559
„ „ T.B. Dispensary	647	„ T.B. Dispensary....	647
„ „ Babies' Hospital	66	„ Babies' Hospital ..	66
„ „ Barium Meals		„ Barium Meals	
„ „ Screened	205	„ Screened	205

Total cases X-rayed.... 3,125

Total exposures..... 4,477

RETURN OF MENTAL CASES, 1936.

	<i>Men.</i>	<i>Women.</i>	<i>Total.</i>
Under treatment, January 1st, 1936....	7	6	13
Admitted during 1935	216	183	399
	<hr/> 223	<hr/> 189	<hr/> 412

Discharged during 1935 :—

Cured.....	15	7	22
Improved	53	41	94
I.S.Q.	7	10	17

Transferred to :—

Mental Hospital	68	68	136
General Hospital	40	37	77
A. and I. Wards	4	7	11
House (Able-bodied)	6	7	13
„ (Chronic)	10	1	11
„ Epileptic	4	2	6
Deaths	12	5	17

Under treatment, December 31st,
1936

4	4	8
<hr/> 223	<hr/> 189	<hr/> 412

PATHOLOGICAL DEPARTMENT.

SPECIMENS EXAMINED :—

Sputa	510
Fæces	479
Blood Sugars.....	111
Blood Ureas.....	376
Blood Cell Counts.....	264
Blood Vandenbergh.....	1
Gastric Analyses	1,322
G.C. Smears	77
Pus and Effusions	124
Cerebro-Spinal Fluid	150
Complete Urinary examinations.....	1,266
Urea Concentration tests.....	17
Blood Sedimentation tests.....	26

Total..... 4,723

Diabetic Clinic Urines.....	1,049
Blood Examinations (Pernicious Anæmia Clinics)	154
G.C. Smears	73

Total..... 1,276

TOTAL REPORTS FOR HOSPITAL LABORATORY 5,999.

BY ARRANGEMENT WITH OTHER LABORATORIES :—

Wassermann Reactions	688
Bacteriological Examinations	461
Histological Sections	347

Total..... 1,496

ADULTS.—CLASSIFIED LIST OF DISEASES TREATED.**MEDICAL.**

RESPIRATORY.

Bronchitis	197	Broncho pneumonia	55
Asthma	54	Lobar pneumonia.....	84
Pleurisy.....	48	Hypostatic pneumonia	1
Bronchiectasis.....	21	Others	13
Bronchitis and Emphysema	17		

DIGESTIVE.

Gastritis	74	Dyspepsia.....	6
Gastric Ulcer	55	Gastro-Enteritis	12
Constipation	12	Cirrhosis of Liver	7
Duodenal Ulcer.....	33	Jaundice	7
Colitis	7	Others	16
Alcoholism	11		

NERVOUS.

Cerebral Hæmorrhage.....	86	Neuritis	10
Cerebral Thrombosis	43	Neurasthenia	45
Functional	36	General Paralysis	22
Disseminated Sclerosis.....	18	Mental.....	83
Epilepsy	44	Neuralgia	9
Locomotor Ataxy	22	Others	37
Paralysis Agitans	4		

DEFICIENCY DISEASE.

Scurvy	2
--------------	---

INFECTIOUS DISEASES.

Encephalitis Lethargica	21	Diphtheria.....	2
Influenza	7	Paratyphoid.....	1
Erysipelas	14	Cerebro-Spinal Meningitis	1
Dysentery	3	Others	3
Scarlet Fever	1		

CIRCULATORY.

Valvular Disease of Heart	135	Aneurism	11
Myocarditis	178	Pernicious Anæmia	31
Pericarditis	2	Leukæmia	5
Arterio-sclerosis	61	Secondary Anæmia	19
Acute Endocarditis	5	Senility	40
Hyperpyæsia	33	Debility	32
Angina Pectoris	8	Others	6
Coronary Thrombosis	10		

RHEUMATIC.

Acute Rheumatism	29	Sciatica	24
Chronic Rheumatism	15	Acute Arthritis	2
Rheumatoid Arthritis	38	Chorea.....	9
Lumbago	9	Others	17
Gout	4		

EXCRETORY.

Acute Nephritis	6	Uraemia.....	17
Chronic Nephritis	35	Cystitis	12
Pyelitis.....	26	Others	2

INTERNAL SECRETORY.

Myxœdema	3	Diabetes Mellitus	48
Goitre	8	Others	8

FOR OBSERVATION.

Cases for Observation.....			30
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TUBERCULOSIS.

Pulmonary.....	80	Non-Pulmonary.....	67
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ADULTS.—CLASSIFIED LIST OF DISEASES TREATED.**SURGICAL.**

Carcinoma	225	Septic conditions.....	27
Sarcoma	5	Ulcers.....	27
Hernia	139	Cellulitis	27
Appendicitis	174	Abscess	66
Cholecystitis	81	Gangrene	22
Gastric Ulcer	17	Mastitis.....	20
Duodenal Ulcer.....	51	Carbuncle	16
Intestinal Obstruction	28	Varix.....	4
Diverticulitis	8	Phlebitis	9
Brain and Spinal Cord.....	70	Hæmorrhoids.....	59
Gastroptosis	6	Empyema.....	8
Peritonitis.....	4	Diseases of Bone	12
Plastic cases	15	Diseases of Rectum	37
Renal Calculus	30	Cystitis	18
Kidney	8	Displaced Cartilage.....	22
Perinephritic Abscess	6	Bursitis	26
Lung Diseases	5	Deformities	25
Fractures	104	Post operative	5
Dislocations	5	Simple Tumours	15
Injuries, Wounds, etc.	55	Teeth	174
Burns	13	Toxic Goitre	9
Prostate	31	Osteo Arthritis	18
Hydrocele	14	Intestinal Colic	13
Urethral Stricture	17	For Observation	38
Retention of urine	2	Others	41
Other Diseases, Male Organs	5		

PREGNANCY AND DISEASES OF WOMEN.

Pregnancy	391	Puerperal Sepsis	3
Albuminuria of Pregnancy	4	Ovarian Cyst	16
Hyperemesis Gravidarum	13	Salpingitis	25
Pyelitis of Pregnancy	7	Uterine Fibroid	16
Placenta Praevia	4	Pelvic Cellulitis	1
Disorders of Pregnancy	21	Diseases of Uterus	82
Miscarriage	159	Disorders of Menstruation	34
Puerperal Pyrexia.....	1	Menopause	1
Ectopic Pregnancy	3	Others	23

DISEASES OF THE SKIN.

Dermatitis	40	Scabies	5
Psoriasis	4	Impetigo	6
Erythema	5	Eczema	8
Sycosis	1	Others	8

VENEREAL DISEASES.

Syphilis	3	Gon. Rheumatism	3
Gonorrhœa	13	Late Syphilis	6
Congenital Syphilis	3	Mixed Infection.....	1

DISEASES OF THE EYE.

Conjunctivitis	3	Others	2
Corneal Ulcer	3		

DISEASES OF THROAT, NOSE AND EAR.

Tonsillitis	19	Laryngitis	2
Tonsils and Adenoids	67	Mastoid	5
Otitis Media	18	Others	13
Deflected Septum	8		

CHILDREN.—CLASSIFIED LIST OF DISEASES TREATED.

MEDICAL.

Bronchitis	63	Digestive	124
Pleurisy.....	4	Diabetes Mellitus	3
Lobar Pneumonia.....	35	Epilepsy	5
Broncho Pneumonia	47	Prematurity	20
Bronchiectasis	14	Marasmus	4
Circulatory	24	Rickets	8
Acute Nephritis	10	Nursing	394
Acute Rheumatism	13	For Observation	23
Chorea	30	Others	40
Excretory	9		

SKIN.

Impetigo	77	Tinea	1
Scabies	46	Verrucous	2
Dermatitis	11	Congenital Syphilis	6
Eczema	3	Others	8
Pemphigus	6		

DISEASES OF THE EYE.

Conjunctivitis	3	Blepharitis	1
Keratitis	1		

DISEASES OF THE THROAT, NOSE AND EAR.

Otitis Media	12	Tonsils and Adenoids	52
Tonsillitis	8	Others	2
Mastoid	5		

SURGICAL.

Appendicitis	38	Sarcoma	1
Hernia	16	Abscess	36
Intussusception.....	2	Septic conditions	5
Intestinal Obstruction	1	Cellulitis	4
Empyema	8	Deformities	3
Enlarged Glands	12	Osteomyelitis	6
Fractures	16	Phimosis	9
Brain Tumours etc.,.....	13	Teeth	11
Burns and Scalds	12	Others	25
Injuries, Wounds, etc.	21		

INFECTIOUS.

Scarlet Fever	6	Varicella.....	1
Influenza	1	Cerebro-Spinal Meningitis	2
Pertussis	5	Erysipelas	3
Measles	15	Dysentery	10
Acute Anterior Poliomyelitis	1	Diphtheria.....	7

TUBERCULOSIS.

Pulmonary.....	29	Non-Pulmonary.....	46
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GEO. P. HARLAN, M.D.,

*Medical Superintendent.**Newcastle General Hospital,*

14th March, 1937.

Report of Department of Neurosurgery.

In presenting a review of the work of the neurosurgical department for the year 1936, it is necessary that the work of previous years should be referred to, since this is the first time that the work of any year has been subjected to an analysis. By this means one is provided with a standard of comparison by which the work of 1936 may be judged and which may provide some indication of the lines for future developments.

Until 1933 there was no provision for the treatment of neurosurgical cases in the north-east of England. A few patients who were in the position to afford it were sent to the neurosurgical clinics in Edinburgh or Manchester, but as far as the majority were concerned, patients were seldom referred by the physician to the surgeon on account of the prohibitive mortality which attended brain operations when performed with the use of general surgical technique. Moreover, there was an increasing disinclination on the part of general surgeons to undertake cerebral surgery, due to their recognition of the totally different operative technique which was called for.

There is a common impression that the surgery of the nervous system consists almost exclusively of the surgery of intracranial tumours, and that this field is one in which the results achieved are a small reward for the great expenditure of time and labour involved. If it were possible to place a monetary value upon human life there would be some justification for regarding neurosurgery as uneconomic, for apart from the high mortality of many operative procedures, many of the cases which the neurosurgeon justly regards as his most brilliant successes are scarcely able to return to a state of full economic usefulness.

Nevertheless, the surgery of intracranial tumours is and doubtless will continue to be the most important activity of a neurosurgical clinic, being invariably the neurosurgeon's dominant interest. In this field there is an unsurpassed opportunity for scientific observation, and it is my firm belief that to regard neurosurgery from a material and utilitarian viewpoint is a mistaken and shortsighted policy, for any line of scientific inquiry, if resolutely followed, will sooner or later and often in some unexpected manner contribute to the common welfare.

The exacting demands of the surgery of intracranial tumours have raised the standard of technique in the performance of other neurosurgical operations to such a level that the success which attends these operations could never have been achieved had the surgery of such conditions as epilepsy, intracranial vascular disease and trigeminal neuralgia developed along their own lines. Moreover, the highly disciplined team work which is an essential attribute of neurosurgery is reflected to an increasing extent in other fields of surgery.

In reviewing the in-patient material which has passed through the department the cases of the tumour group will be considered first. The "verified" cases are those in which the presence of an intracranial tumour has been confirmed by the histological examination of tissue obtained at operation or autopsy. If such confirmation is lacking the case is classed in the group of "unverified" tumours until the diagnosis is finally settled. This group for any given period of time diminishes, for most of the cases belonging to it will either be re-operated upon or will come to autopsy when the diagnosis will be histologically confirmed or refuted. The only cases which remain permanently in this group are those in which no autopsy is carried out. The group of "suspect" cases for a given period also diminishes with the passing of time, for with continued observation a case will either declare itself as a definite case of intracranial tumour, or the possibility of the presence of a tumour will be excluded by arriving at an alternative diagnosis.

It is of some interest to note the extent to which the services of the department have been given to cases from outside the Newcastle boundaries. This applies equally to cases of all types admitted to the clinic, but a consideration of the domicile of the cases of the tumour group is sufficient illustration of this point.

VERIFIED TUMOURS (INCLUDING SPINAL CORD).

Year.	Number.	Newcastle.	Tees-side.	Other districts.
1933	25	9	3	13
1934	33	16	2	15
1935	36	15	8	13
1936 (to August)	25	7	2	16
Total	119	47	15	57

Cases of other types.

ARACHNOIDITIS—SEROUS AND CISTERNAL.

1933	....	....	2
1934	....	....	9
1935	....	....	7
1936	....	....	4

This condition is one of considerable importance since it is a frequent cause of blindness. Four patients of the above series were already blind when admitted to hospital, but in the others good results have been obtained following simple decompressive operations. There is no striking increase in the number of patients of this class for reasons which are probably related to some obscure epidemiological factor. It is noteworthy that the great majority of these cases have been operated upon during the winter months.

EPILEPSY.			
1933	....	....	3
1934	....	....	5
1935	....	....	7
1936	....	....	13

The recent understanding of the essentially focal nature of the origin of the convulsive attack in epilepsy has resulted in the successful surgical treatment of many cases which have previously been regarded as "idiopathic." This is reflected in the increasing number of epileptic patients who are admitted to the clinic. These cases have been selected from a rapidly increasing number of epileptics who are referred by their local doctors. The majority of these cases, even in the light of modern knowledge, are obviously unsuitable for surgical treatment and their number is already proving a difficult problem in the absence of adequate facilities for dealing with out-patients. Moreover, the clinic is often besieged by epileptic patients who attend for no other reason than the monthly supply of prominal, for which the National Health Insurance makes no provision. No detailed records of these out-patient attendances have so far been kept.

VERIFIED INTRACRANIAL TUMOURS.			
1933	....	....	25 (20 operated)
1934	....	....	33 (25 operated)
1935	....	....	33 (21 operated)
1936	....	....	28 (27 operated)
VERIFIED SPINAL CORD TUMOURS.			
1933	....	....	0
1934	....	....	0
1935	....	....	1
1936	....	....	2
UNVERIFIED INTRACRANIAL TUMOURS.			
1933	....	....	2
1934	....	....	3
1935	....	....	6
1936	....	....	3
UNVERIFIED SPINAL CORD TUMOUR.			
1935	....	....	1
INTRACRANIAL TUMOUR SUSPECTS.			
1933	....	....	0
1934	....	....	2
1935	....	....	12
1936	....	....	9

The large number of verified cases of intracranial tumour during the year 1933 calls for some comment. Regular operative work did not start until April of that year, and all work in the clinic was interrupted for four months in the later part of the year. The fact that 25 cases were dealt with in the course of six months is a sufficient indication of the urgent need which existed in the district for the provision of a neurosurgical clinic; it indicates also the ready response of the profession to the provision of facilities for treating a class of case hitherto unprovided for.

The majority of cases in the "suspect" group are those sent directly to the hospital by practitioners with the diagnosis of an intracranial tumour in which subsequent investigations reveal no positive evidence of a tumour or other grounds for operative intervention. The number of these cases is very small in proportion to the number of verified tumours since most cases of the latter are seen by me in the hospitals throughout the district which co-operate with this clinic. It should be mentioned that the number of cases of all types seen in other hospitals with the view to their transfer to the neurosurgical clinic amounts to at least twice the number of cases handled in this clinic although no record of their actual number is available.

INTRACRANIAL VASCULAR DISEASE (INCLUDING ANEURISMS).

1933	....	....	4
1934	....	....	6
1935	....	....	10
1936	....	....	13

This class is represented almost entirely by cases from the tumour suspect group in which investigations have excluded the presence of an intracranial tumour. The increase in the number of cases in this group would appear to be proportional to the number of cases admitted for investigation.

TRIGEMINAL NEURALGIA AND ALLIED CASES.

1933	....	....	5
1934	....	....	8
1935	....	....	0
1936	....	....	3

The large incidence of these cases in the early period of activity of the clinic is perhaps explained by the fact that in many of them the symptoms were of many years' duration, no surgical treatment having been undertaken in view of the prohibitive risk which attends the section of the trigeminal sensory root when performed in the absence of proper facilities. Trigeminal neuralgia is a rare disease and it is improbable that more than four or five cases will be seen each year.

UNCLASSIFIED.

1933	....	....	5
1934	....	....	7
1935	....	....	12
1936	....	....	16

The foregoing group does not include many cases of head injury which have been supervised at the request of the general surgeons. Unless these cases have displayed features of some special neurological interest no record has been kept of them outside the general surgical records. The supervision of cases of head injury has frequently been undertaken in other hospitals cases by the invitation of the surgeons concerned.

OPERATIVE WORK.

Major operations.	1933.	1934.	1935.	1936.
Osteoplastic explorations	21	20	23	40
Suboccipital explorations	5	16	8	5
Subtemporal decompressions.	9	8	11	6
Trigeminal nerve sections etc.	3	14	0	5
Auditory nerve sections	2	0	4	1
Ventriculograms	16	23	34	43
Laminectomies.....	0	2	4	3
Unclassified	12	10	5	13
Total	68	93	89	116

The foregoing statistics of the work of the neurosurgical department during its four years' existence show a steady increase in all branches of neurosurgery. The only possible exception is that of intracranial tumours if one is to judge the work of the clinic by the number of patients admitted, but the number of operations for intracranial tumour performed during 1936 is more than in any previous year. An increasing number of patients are seen and supervised in other hospitals in the district, and when a patient's prospects are seen to be hopeless he is not admitted to this hospital. In previous years all patients with the diagnosis or even the suspicion of an intracranial tumour were admitted to this hospital, but with the existence of better facilities for the selection of cases only those cases are admitted in which there are some hopes of ultimate improvement. This policy has been attended by an increasing reduction in operative mortality, but it is important that it should not be pursued too far for a certain amount of clinical material of scientific interest will otherwise fail to reach the department.

In reviewing the work of the department one is faced with the question of how far the existing facilities satisfy the needs of the population of this district. The department has constantly,

though at times with difficulty, kept pace with the demands made upon it. How far the neurosurgical requirements of the population are met is another matter. It is an established principle in the United States of America that a population of one million will keep a neurosurgeon fully occupied. If the incidence of neurosurgical diseases in this district is equal to that of America one is forced to the conclusion that a large amount of clinical material in this district remains untouched. Moreover, in considering the increase in the number of patients who are admitted to the department, one must not lose sight of the fact that an increasing number of patients are being admitted to the department from areas as far afield as the West Riding of Yorkshire and the North Midlands.

The absence of any official association of the department with the Newcastle College of Medicine has contributed to the formation of close ties elsewhere. Since October, 1934, all routine pathological work has been carried out in the laboratory of the Royal College of Physicians of Edinburgh, a large amount of this having been done gratuitously when the pathological material has had some features of special interest. With the combined material of the Edinburgh and Newcastle neurosurgical clinics an Intracranial Tumour Registry has been established by the Royal College of Physicians of Edinburgh. This institution, which is the only one of its kind in this country, provides an unrivalled opportunity for the study and correlation of information regarding the less common types of intracranial tumour. A close interchange of material and opinion exists between this and the Manchester clinics. Certain extensive studies have been carried out on our material in the departments of anatomy and surgery of Manchester University and papers are shortly to be published on the combined experience of the two clinics on certain subjects.

In concluding my report it is the source of the greatest pleasure for me to be able to express my appreciation to my colleagues and assistants, to the operating and ward nursing staffs, and to Dr. Harlan, for the help and encouragement which they have so constantly given.

A. R. D. PATTISON, F.R.C.S.,

*Surgeon in Charge of the
Department of Neurosurgery.*

*Newcastle General Hospital,
June, 1937.*

FEVER THERAPY DEPARTMENT.

It has long been recognized that fever in disease is part of a bodily reaction of defence, usually against micro-organisms. From time to time attempts have been made to use artificially induced fever as a means of treatment, for example, the practice of bathing in very hot natural springs in Japan, for the subjects of certain diseases, goes back for centuries. Occasionally the accidental occurrence of an infection with high fever in the course of some chronic disease has been followed by prompt and unexpected recovery of the latter.

Such isolated observations culminated in the great discovery by Wagner-Jauregg of Vienna, in 1918, of the curative effect of artificially induced malaria in general paralysis of the insane (G.P.I.) To inoculate with malaria patients already seriously ill was in the first instance a bold undertaking, and indeed Wagner-Jauregg planned the method for many years before he adopted it. In the meantime he tried various other methods of inducing fever, methods which he hoped would be less severe than malaria, but though considerable effects were produced they fell far short of those obtained when at length he employed malaria. In fact, the outlook in this disease, formerly associated with progressive insanity and uniformly fatal within five years, has been enormously improved by Wagner-Jauregg's discovery, though it is still a very serious malady.

Naturally enough, this work led to renewed interest in the possibilities of fever treatment, and research has proceeded chiefly in two directions. Firstly, workers have sought to discover what other diseases, if any, would respond to fever ; secondly, numerous other methods for producing fever, besides malaria, have been investigated.

In the Fever Therapy Department of the Newcastle General Hospital we are endeavouring to take a share in both aspects of this work. Before the Department opened in 1933 much preliminary research had been done by one of us (S.F.E.) in the Physics Department of Armstrong College under the supervision of Professor W. E. Curtis, F.R.S., and with the support of the Medical Research Council. The work was inspired by the observation of a great American engineer, Dr. W. R. Whitney, of a rise in body temperature of persons working in the neighbourhood of short-wave radio transmitters. Subsequently, Carpenter and Page in Whitney's laboratory devised an apparatus whereby short waves could be utilized to produce fever in man. The work at Armstrong College

proceeded on similar lines, and so soon as technical perfection appeared to have been reached, a number of students and others submitted themselves to practical trials and permitted their temperatures to be raised to high levels. Finally, the apparatus was installed in the Newcastle General Hospital, where it has been used to produce fever nearly 500 times. It may be said at once that experience has amply justified our confidence in its reliability and safety.

The chief claim for the electrical method, as opposed to the inoculation of malaria, is that it is much safer because of its precise control and because it does not weaken the patient as does an attack of a severe infective illness. Most workers are also convinced that it produces a higher percentage of cures. Further, it has become manifest that in an important group of conditions, namely, gonococcal infections, in which this treatment is of great value, fever is required of a range and duration which can only be obtained by physical methods.

No finality has been reached in regard to the precise electrical method, and at the present time, with the further help of the Medical Research Council, we are engaged in constructing additional apparatus. The original machine is the property of the Medical Research Council, who have loaned it to the Hospital and have throughout watched our work with sympathetic interest. We feel that this example of co-operation between the national research organization and a municipal hospital is specially worthy of comment.

Malarial treatment originated in Austria, and electrical fever in the United States of America, where it has now been studied on a large scale with characteristic energy and enthusiasm. In the spring of this year the First International Conference on Fever Therapy was held in New York, and this we were privileged to attend. For the first time workers on this subject were able to discuss their mutual problems both in formal conference and privately. We were part of a very small British contingent. In addition we paid personal visits to fever therapy centres in New York, Rochester and elsewhere. The experience so gained was invaluable, and indeed without it we should have been unable to institute advances in treatment which we believe to be important and upon which we intend to start work during the coming winter.

F. J. NATTRASS.

S. F. EVANS.

Newcastle General Hospital,
July, 1937.

Report of Department of Thoracic Surgery.

It is my privilege to submit this, the first report on the work done in the Department of Thoracic Surgery at the Newcastle General Hospital, from its commencement until the end of December, 1936—a period of just over two and a half years.

A pressing need for accommodation as a result of the recent and rapid developments being made in Thoracic Surgery led to the establishment—at first on an experimental basis—of this Department in May, 1934. Since then in the period under review 174 cases of thoracic diseases have been undertaken and 340 operations performed. The steady way in which the volume of the work has increased is illustrated by these figures :—

During May—Dec., 1934, 17 cases were admitted and 27 operations performed.

During 1935, 65 cases were admitted and 118 operations performed.

„ 1936, 92 „ „ 195 „ „

Some indication is also given by these figures, that several “operations” were required by many of these cases. Indeed, not only are many of the remedial operative interventions of necessity carried out in stages, but a large proportion of these cases require “major” investigations ranking for all practical purposes as operations. Such an investigation is usually some form of “endoscopic” examination, such as bronchoscopy, oesophagoscopy, or thoracoscopy, where the bronchus, gullet, or the interior of the chest respectively are inspected with the aid of specially designed electrically illuminated instruments; in this series, 116 of these examinations were made and are included in the figures just given. Direct estimations of the blood pressure within the great veins are being made with increasing frequency in connection with the work now in progress on cardio-vascular diseases.

Although only a relatively small proportion of those who suffer from chest diseases are suitable for surgical treatment at the present stage of its development, this does not detract from the value of your Committee’s action in making it available for the citizens of this district. Their decision was a necessary one, because such facilities were not previously available in any of

the "voluntary" or other hospitals in the vicinity. Actually, this is one of the first hospitals in the country, certainly the first in the provinces, to make such special provision for all types of surgical thoracic work.

The Public Authorities have been responsible for many years for the treatment of tuberculosis, and in this connection they maintain an elaborate system of Dispensaries to which cases of many types of chest diseases are sent for investigation, etc. Although, as the statistics given later show, thoracic surgery is far from being principally concerned with phthisis, the value of a close association with this Dispensary system is obvious, and such is most easily effected, when the surgical clinic is established in a Public Authority's Hospital. Indeed, under ordinary circumstances, the almost complete absence of any private practice, whereby he may make a living consistent with the nature of his work, makes it impossible for a surgeon specialising in this difficult branch of surgery, at any rate in the provinces, to do so as part of the work of a "voluntary" institution. This position is almost unique amongst the various specialities into which modern medicine is divided, therefore thoracic surgery requires special consideration. The following factors are probably responsible; an unusually high proportion of those requiring treatment occurs apparently amongst the poorer classes of the community; very prolonged periods of hospitalisation are required—the average stay in hospital of our cases has been 66.3 days, this figure includes those who have been admitted for investigation for a few days only, and others which have been in hospital for more than 200 days—and the actual stay of those subjected to any major thoracic operation has rarely been shorter than three or four months; finally, all these cases require repeated radiological examinations and other expensive investigations, on such a scale, that only a wealthy patient would be able to bear the cost personally. Accordingly, it seems obvious that the Thoracic Surgeon must be subsidised, not, as are his colleagues in general surgery, by private practice, but directly by the Public Authorities of the district in which he works, the services of each individual Thoracic Surgeon being utilised by several such Authorities. Certain cases of tuberculosis may and should be operated upon in the Sanatoria, if these are large enough to carry the necessary equipment, otherwise, as many cases as possible requiring thoracic surgery should be concentrated in one centre, so that the most economical use may be made of both personnel and equipment, and needless and

wasteful reduplication avoided. Likewise, academically and scientifically greater benefit would probably be derived from the experience at a "clinic" in which the bulk of the work from the area is centralised than from a number of small and—by nature of the expensive equipment required—relatively inefficient clinics.

The most useful contribution which the Thoracic Surgeon would apparently be able to make towards the work of the voluntary hospitals of his district, will probably prove to be of a consultative nature, cases being seen by him, when requested, and transferred if suitable for further special investigation and operation to the Public Authority's Hospital—an arrangement already obtained elsewhere and likely to prove successful. Actually, this has been the unofficial practice in this city ever since our Department was established, and in an attempt to have this arrangement made "official," an appeal was made some time ago to the Staff of the Royal Victoria Infirmary asking for their co-operation; their answer has not yet been received, but it is hoped that it will be favourable, and an arrangement, beneficial to the district and facilitating the working of this Department, will result.

The Authorities of the surrounding districts have co-operated where possible in arranging for the admission of patients living in their areas, and it is likely that in the near future this co-operation will become closer. At present it is necessary to negotiate each such admission separately, an arrangement which sometimes entails the loss of much valuable time; the institution of some "automatic" mechanism whereby such cases could be dealt with without undue delay is desirable. "Unification of Tyneside" in whatever form it eventually takes should be of help in this way.

Although the majority—102—of the cases treated in the Department since its beginning were naturally citizens of Newcastle-upon-Tyne, a considerable number—actually 73—were from the area of some other Local Authority through whose co-operation their admission was facilitated. These latter included :—

22	cases from	Gateshead.
21	„ „	Durham County.
20	„ „	Northumberland.
5	„ „	Middlesbrough, Hartlepool, and Billingham.
3	„ „	South Shields.
2	„ „	Darlington.

Scope of Thoracic Surgery.

It may not be out of place in this first report, to outline some of the conditions with which we have had to deal, and to explain the measures adopted for their relief. The impression, widely held, that this branch is principally concerned with the surgical relief of phthisis is erroneous. Admittedly, this forms a very important but by no means the principal part of the work, as a glance at the following analysis of the 174 cases dealt with in the Department shows :—

- Of these, 50 were cases of pleural or pulmonary tuberculosis ;
- 67 were cases of other inflammatory conditions of the lungs, such as abscess, gangrene, pneumonitis, infected lung cysts and bronchiectasis ;
- 27 were cases of other inflammatory conditions of the pleura, chest wall, and sub-diaphragmatic spaces ;
- 12 were cases of malignant disease of the lungs and bronchi ;
- 4 ,, ,, mediastinal growths and abscesses ;
- 7 ,, ,, oesophageal obstruction ;
- 7 ,, ,, diseases of the heart and great vessels.

(a) **Tuberculosis** is usually treated under the direction of a physician in a Sanatorium. At first it is customary to employ only constitutional measures, the patient being kept under close observation during this period. The disease may resolve completely in favourable cases with this treatment, but it not uncommonly fails to do so, and then tends to run one of two courses—one on the whole favourable, in which there is a more or less marked tendency to form scar tissue whereby the condition may heal ; the other, and usually unfavourable type, is characterised by the occurrence of pneumonic consolidations in the affected portion of the lung. In the former some form of “collapse” therapy is likely to prove beneficial, but this is not the case with the latter type in which constitutional measures are usually relied upon in the hope that as the general condition improves so will the type of the local disease change. Efforts are being made to ascertain the possibility of so influencing by operative measures the local condition in the “pneumonic” types of the disease that a more “fibrous” reaction will result.

“Collapse” therapy includes a number of measures designed to facilitate the collapse of a diseased lung so that any scar tissue which has formed therein may contract and so healing is encouraged. The best and simplest

form of such collapse available is that attained by the establishment of an artificial pneumothorax ; this may be inadequate because of the presence of adhesions which hold the diseased lung to the chest wall and so prevent its collapse. If these adhesions are not too dense, they may be detached from the chest wall by means of an electric cautery operated through a small puncture with the aid of the thoracoscope.

If the nature or distribution of the adhesions is such as to preclude this relatively simple operation, then it becomes necessary either to separate the lung from the chest wall by blunt dissection and to maintain the resulting collapse by inserting a plug of paraffin wax—"plombage"—or to remove portions of the ribs from the overlying chest wall and collapse this in with the adherent lung ; (Fig. 1, page 175A) this operation of "thoracoplasty" formerly one of great danger and severity has now by improvements in technique, based largely upon the work of Sauerbruch, and by carrying it out in several stages, been made comparatively safe. It is important to realise, that so long as a "focus" of tuberculosis remains uncontrolled and unhealed, its products—sputum—are a menace not only to the community but to the rest of the patient's lung tissue. Statistics are notoriously difficult to assess, and our experience is too recent to permit of any attempt to do so, but it is indisputable that the expectation of life of a patient with such an uncontrolled focus is exceedingly short. It is equally indisputable that there are some thousands of people in Central Europe, Scandinavia, and America, alive, cured of the disease, and working to-day, as a direct result of such operations, who would otherwise now be dead.

The development of septic fluid—pyopneumothorax—in the pleural cavity is one of the most serious complications of pulmonary tuberculosis ; in such cases an operation to drain the fluid away is urgently required, and if the patient survives this serious illness, a thoracoplastic operation is necessary to obliterate the resultant cavity.

- (b) **Suppurative diseases** of the lungs are frequently seen by the Thoracic Surgeon, but the majority recover without operation—occasionally after a very prolonged period of observation. Spontaneous resolution of suppurative

pneumonitis, of lung abscess, and even of lung gangrene may occur, and the symptoms of infected lung cysts and bronchiectasis—even in the inevitable persistence of gross anatomical deformity—may completely disappear. Hence active surgical intervention is withheld until it becomes obvious that either the maximum spontaneous recovery has occurred, or that the patient is in the optimum condition for it. A patient is in danger of death from septic poisoning, super-added pneumonia, or from abscesses in the brain so long as there is an active focus of lung sepsis. Some of these patients, who are regarded as free from sputum, are often found on examination to be swallowing relatively large quantities. Further, patients with such diseases as bronchiectasis, even when free from symptoms, are always in danger of relapse; the imminence—or what is of more importance for purposes of prognosis, the likelihood—of such a relapse cannot be foretold.

Lung abscesses are drained as a rule only when it is obvious that spontaneous recovery will not occur, when the acute phase is over and the lesion well encapsulated, and when precautions have been taken to ensure that the lung is so adherent to the chest wall that the drainage can be carried out without risk of spreading the infection to the pleura. (Fig. 2, page 175B.)

Removal of the involved portion of the lung is advised for bronchiectasis when the disease is limited to the lower part (Fig. 3, page 175C) or even the whole of one lung; it is now also known that it is possible to remove the lower portions of both lungs under certain circumstances. Collapse therapy has little practised application in this condition, being of no curative value and not without danger. Extirpation, although a serious operation, is followed in the great majority of cases by recovery, restoration to normal health, and freedom from expectoration.

Lung cysts of congenital origin occasionally become infected and may give rise either to the expectoration of septic sputum or to symptoms resembling empyemata for which operations may be radically performed; the symptoms are only permanently relieved when its true nature is recognised and the cyst removed. (Fig. 4, page 175D).

- (c) **Empyema**—or septic pleurisy—is almost always a complication of acute pneumonia and was formerly treated by drainage as soon as the presence of the pus was detected. This is now known to be unwise, especially in the case of infants and young children, and in others in whom the empyema forms early in the course of the pneumonia ; it is now customary to temporise by aspirating the pus—repeatedly, if need be—until the tissues have stiffened sufficiently to permit of the chest being opened without undue danger of displacement of the heart and other important organs.

Adequate drainage having been established its maintenance is imperative until there is incontrovertible radiological evidence that the lung has completely re-expanded and is *everywhere* in contact with the chest wall, otherwise recurrence and consequent chronic invalidism follows. The rate of this re-expansion varies enormously in different cases but it can usually be facilitated by suitable breathing exercises carried out under the supervision of a masseuse familiar with the object in view. The majority of the chronic empyemata referred to the Clinic have been directly attributable to premature removal of the drainage tube ; simple restoration of the drainage for an adequate period sufficed to restore many of these cases to health, but in others an extensive thoracoplastic operation was required to terminate what was probably an unnecessarily prolonged illness.

- (d) **Growths of the lungs and bronchi** are being recognised with increasing frequency as a result of the improved methods of diagnosis now available. Unfortunately the vast majority of these growths have already progressed beyond the bounds of legitimate surgical enterprise when first seen by the Thoracic Surgeon. This has been the experience in this Department ; indeed, of the 12 cases admitted to the Department, not one was found suitable for removal, although in several instances exploratory operations were carried out to ascertain the possibility of this being done. Experience elsewhere, notably in America, has shown that it is possible to detect the presence of some of these growths at a sufficiently early stage to permit of their removal. When the occurrence of abnormal expectoration

—notably blood—is regarded as a symptom urgently requiring investigation, just as urgently as either the vomiting, of blood or its passage in the urine, more cases will be diagnosed during a phase amenable to surgical treatment.

The provision of facilities for treatment by high-powered X-radiations within the near future is likely to be of benefit to these cases to whom at present little or no relief can be given.

- (e) **The mediastinum** is a region situated vertically in the centre of the chest between the two lungs, and about its diseases, and the possibility of their surgical relief, knowledge is slowly being accumulated. In foreign clinics the most frequent indication for opening the mediastinum is for goitres deeply situated behind the sternum and giving rise to asphyxial symptoms; strangely enough, no cases of this type have presented themselves for treatment here. When infections occur in such a deeply situated and relatively inaccessible region, they are naturally likely to have made considerable progress before a diagnosis, sufficiently accurate to permit of operation, can be made; even so, it is occasionally possible to bring such cases to a successful conclusion. (Fig. 5, page 175E.)

Asphyxial disturbances and congestion of the great veins due to compression of the structures within the mediastinum either by malignant growths or large aortic aneurysms may be afforded symptomatic relief by splitting the upper part of the sternum.

Dermoid cysts in the mediastinum may attain comparatively large dimensions without attention being drawn to their presence; indeed, they are usually discovered either as a consequence of some complication, such as erosion into a bronchus, or accidentally. Their removal is now a recognised surgical procedure. (Fig. 6, page 175F.)

- (f) **The œsophagus**, when there is any appreciable disturbance in the function of swallowing, requires a complete investigation in which radiological methods and direct endoscopic inspection are indispensable. Only too often, when a patient complains of dysphagia, an automatic diagnosis

of " cancer of the gullet " is made and the patient literally abandoned. In many cases no doubt this diagnosis is correct, but in no case should it be made until the investigation referred to has been carried out, as it is only thus that certain benign lesions amenable to surgery may be discovered.

Cardiospasm—or spasmodic dysphagia—may be cured in many instances by psychological measures and in others by some form of dilatation ; a certain number can only be relieved by anastomosing the lower end of the oesophagus to the stomach, an operation short-circuiting the region affected by the spasm or stricture and carried out most satisfactorily through the chest.

Several cases are now on record where it has been possible to remove the portion of the gullet affected by a cancerous growth, but speaking generally the results are extremely disappointing ; it is hoped that technical developments will improve this position. In conjunction with Mr. Thurgar of the Newcastle Radium Centre a case of this type was treated by applying radium directly to the growth after bi-lateral exposure of the oesophagus ; the result, though not in the long run successful, gave us much valuable information which we feel may be applied with some confidence of success to future cases.

- (g) **The surgery of the heart and great vessels** is probably the most recently opened field for surgical enterprise. It has of course been known for long that cases have survived wounds of the heart after their repair ; similarly, recovery has followed removal of fragments of shot and other missiles from the heart, but such are rare in this country, at any rate in peace-time. Empyema of the pericardium is an infrequent but lethal complication of sepsis elsewhere ; when it is the principal disease, it appears to kill, rather by compressing and so embarrassing the action of the heart than by its virulence ; accordingly, it is well worth attempting drainage when the condition is diagnosed, this having been followed by recovery.

Decompression of the heart by incising or by removing the pericardium is now a recognised surgical procedure for those cases in which it is apparent that the pericardium

by reason of its tightness or its adhesion to the heart is interfering unduly with the return of the blood along the great veins to that organ. In these cases, ascites, cyanosis, and distension of the veins of the neck are prominent features; the heart may or may not be grossly enlarged, and it may or it may not be affected with valvular lesions; the venous blood pressure however is constantly found to be elevated—often markedly. It is important, when operating on these cases, to remember that the operation should be primarily a decompression, as we have found that extensive stripping of an adherent pericardium from the heart may deprive that organ of an important part of its blood supply, with serious consequences.

In certain cases, where the heart muscle receives an inadequate blood supply due to changes in the coronary arteries by which it is normally supplied, either heart failure or severe attacks of pain and syncope—angina pectoris—occur and ultimately kill the patient. O'Shaughnessy has shown that certain of these cases, if otherwise suitable, may be greatly benefited by grafting the omentum on to the surface of the heart; this operation is neither severe nor unduly dangerous, if the appropriate precautions are taken. The results of the operation are distinctly encouraging. Natural cure of saccular aneurysms of the aorta is by clotting and subsequent organisation of the blood within the sac; this process may be initiated and hastened by the introduction of gold wire (Colt) into the sac; in one such case of ours the aneurysm was pointing through the front of the chest wall; the patient, a bed-ridden invalid, was completely relieved after treatment by this method and now reports occasionally as an Out-patient.

Accommodation.

Naturally at first, when only a few cases were undertaken and admissions were sporadic, very little demand was made upon the accommodation; later, however, the position changed so rapidly that during the earlier part of 1936 about 25 beds were constantly occupied by these cases. Of late it has been necessary to increase this accommodation so that by the end of the year 30 beds were in use and it seems not unlikely that even this figure

will be exceeded in the near future in view of the frequency with which cases are presenting themselves for investigation and treatment. As the scope of thoracic surgery becomes more widely appreciated and as the arrangements for the admission of cases from surrounding areas become more automatic, the demand for accommodation in all probability will be such that it will be possible to keep between 70 and 80 beds more or less in constant use. The most suitable type of accommodation for these cases is that in which the majority of the patients are housed in rooms of about 4 beds each, together with an adequate number of single-bedded rooms for dangerously ill and other cases requiring such segregation. It is hoped that when the Department is re-housed in the proposed new block these requirements will be met. Accommodation is also required for the private cases which occasionally come for treatment and for whom there is no suitable accommodation available elsewhere in the City.

Academic Activities.

At present there is no systematic instruction in thoracic surgery given at the University of Durham College of Medicine, but during the past two years demonstrations have been given as part of the voluntary classes which the students may attend in this Hospital during the summer term. Similarly, some of the students have attended the operations in the Department. Your Thoracic Surgeon has also participated for the past three years in the various Postgraduate classes and intensive courses arranged by the College, including the Sunday morning Ward Demonstrations for general practitioners. Systematic instruction in the fundamental principles and scope of thoracic surgery is manifestly required by medical students, and it is desirable that this should if possible be given in a Clinic such as ours. Students from the College already have to attend affiliated institutions for instruction in infectious diseases, psychiatry, children's diseases, vaccination, and midwifery, so that no new precedent would be established if such an arrangement were implemented.

Numerous surgeons, not only from other centres in this country but from abroad, have visited the Clinic and seen the work in progress therein.

Contributions to the literature relevant to the work of the Department include the following :—

- “ Surgical Aspects of Phthisis,” *Newcastle Medical Journal*, Vol. XIV., October, 1934.
- “ The Post-Operative Management of Acute Empyema Thoracis,” *British Medical Journal*, 29th December, 1934, Vol. II., p. 1197.
- “ Some Impressions of Continental Thoracic Surgery,” *University of Durham College of Medicine Gazette*, February, 1935.
- “ Pulmonectomy ” (A preliminary report on two cases in which an entire lung has been successfully removed), *British Medical Journal*, February 16th, 1935, Vol. I., p. 299.
- “ Surgical Treatment of Pulmonary Tuberculosis,” *Clinical Journal*, June, 1935.
- “ Extirpation of the Lung,” *Lancet*, May 9th, 1936, p. 1047.
- “ The Treatment of Pulmonary Suppuration,” *Post-Graduate Medical Journal*, November, 1936.

Every effort has been made to keep the work of the Department abreast of that in progress in other Clinics ; accordingly, whenever and as frequently as possible these have been visited, discussions participated in, and conferences both in this country and on the continent attended. By the courtesy of the Council of the Royal College of Surgeons of England it has been possible to carry out a certain amount of instructive and necessary experimental work at their Research Farm at Downe, some of which is still in progress. As a Hunterian Professor, in February, I delivered a lecture before that College on “ Extirpation of the Lung ”—based largely upon experience derived from the work in the Department.

A cinematographic film illustrating the underlying principles and execution of the operation of Thoracoplasty was made in conjunction with Dr. James Whillis, of the University of Durham College of Medicine Anatomy Department. It received very flattering criticisms from the Film Institute, and has been shown at numerous medical meetings in this country.

Conclusion.

The work outlined in this report, although arduous, exacting, and often worrying, is of the greatest possible interest. Many of the operations performed are admittedly serious undertakings

but almost without exception the diseases for the relief of which their aid is invoked are such that the victims have little or no prospect of either prolonged existence or reasonable health if the operations are withheld.

It is impossible to acknowledge individually all those—especially my physician colleagues and the Radiological Department—upon whose co-operation the success of the work has largely depended. It is necessary, however, to record my appreciation of the highly skilled assistance rendered by my Anæsthetist, Dr. Philip Ayre, and the loyal way in which Mr. Andrew Logan, Surgical Registrar at the Hospital, my House Surgeons, and the Nursing Staff have done everything in their power to facilitate the work.

GEORGE A. MASON, M.B., B.S. (DUNELM), F.R.C.S. (ENG.),

Surgeon in Charge of the

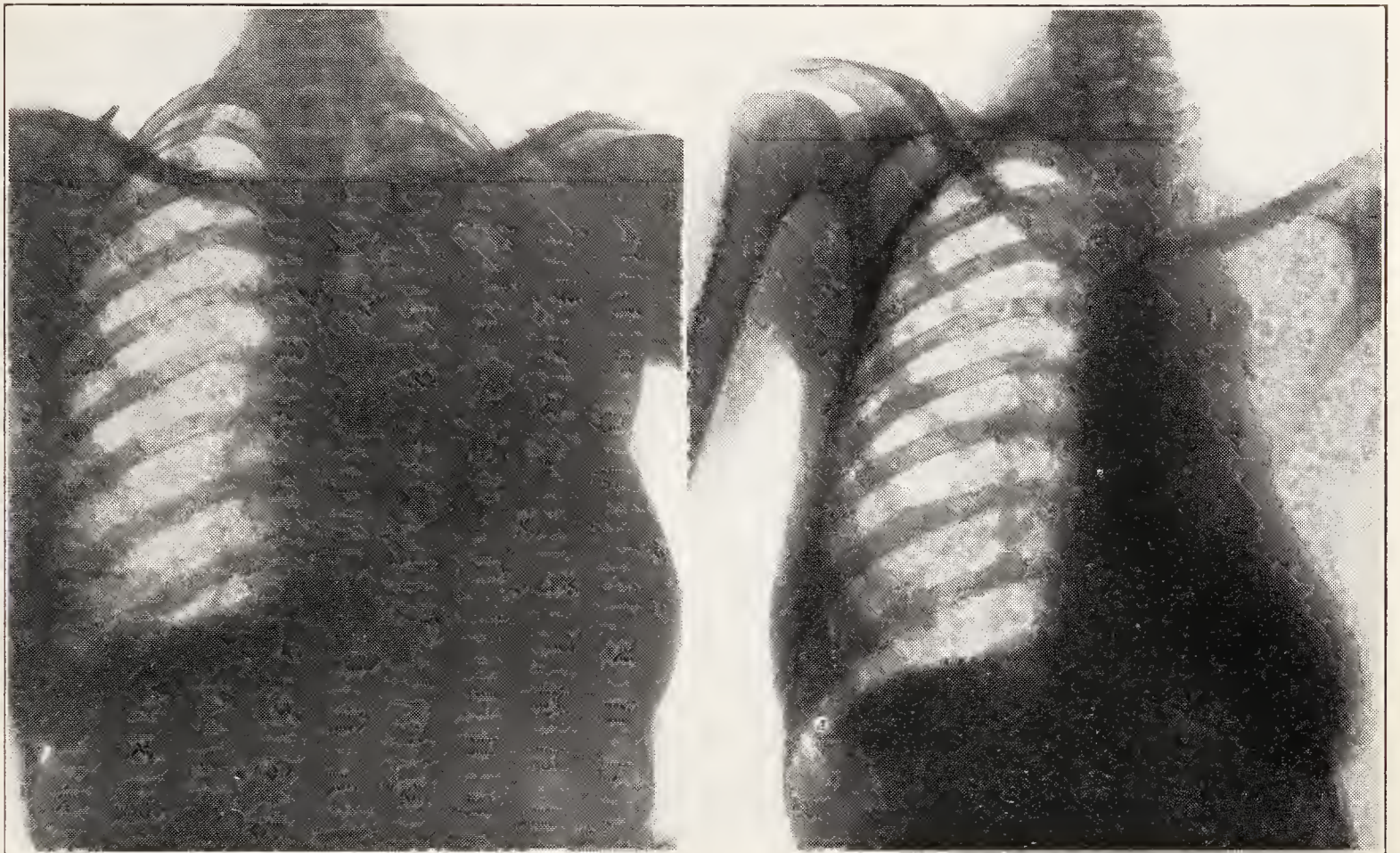
Department of Thoracic Surgery.

Newcastle General Hospital,

31st March, 1937.

FIG. 1.

TOTAL PARAVERTEBRAL THORACOPLASTY FOR PULMONARY TUBERCULOSIS.

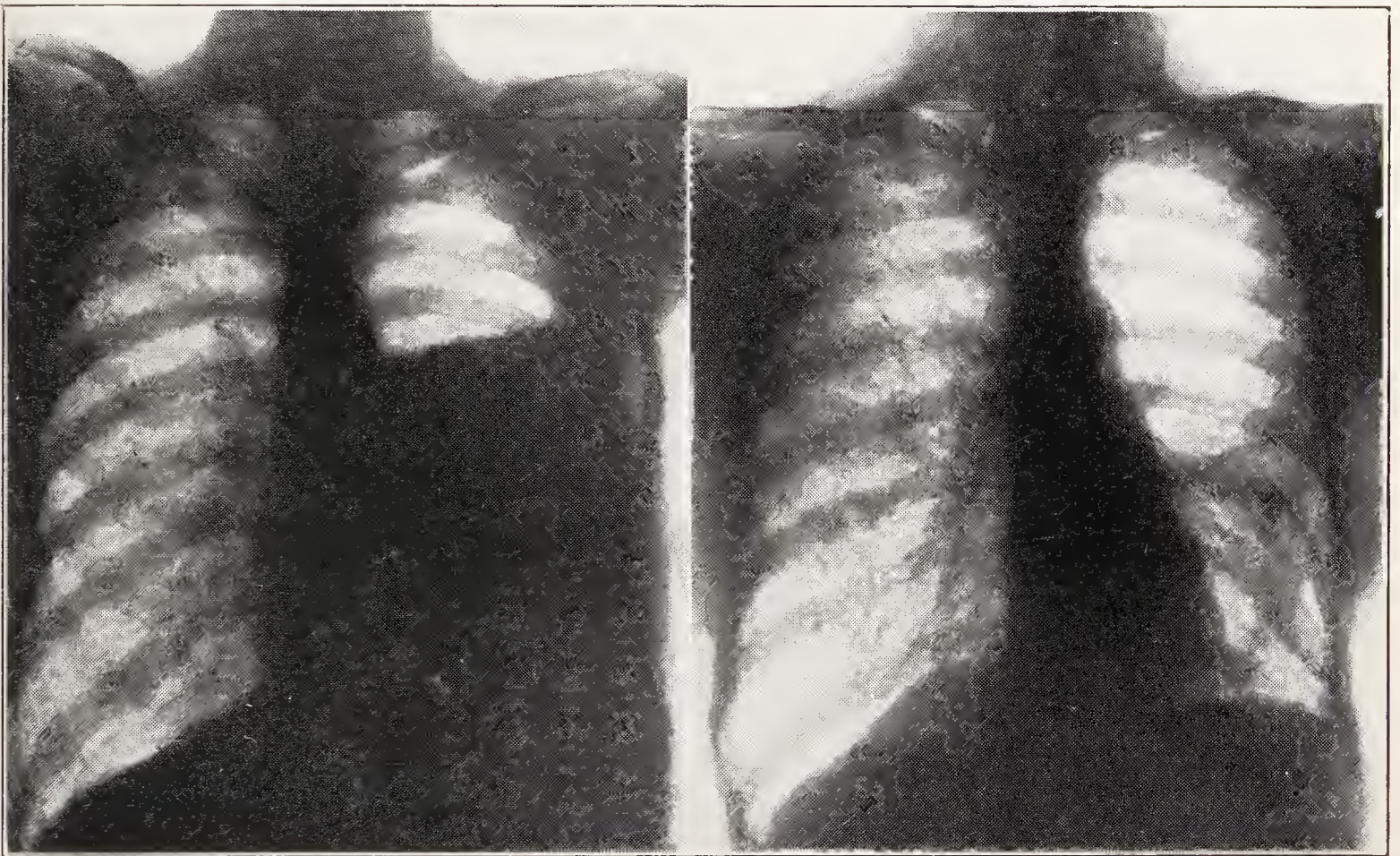


(a)

(b)

A young woman who had suffered from tuberculosis for several years, and who had received several courses of sanatorium treatment, was referred for surgical treatment. X-ray examination (a) showed that the left lung was extensively affected, but that the disease was of a fibrous type, as the lung, as a result of its shrinkage, had pulled the heart and trachea far over into the left side of the chest. Following thoracoplasty the patient has returned to normal life in good health and free from sputum. Subsequently X-ray examination shows that the lung has been satisfactorily collapsed (b).

FIG. 2.
ENORMOUS LUNG ABSCESS : DRAINAGE : RECOVERY.



(a)

(b)

A man had suffered for several weeks from cough, expectoration of large quantities of foul sputum like anchovy sauce, wasting, anæmia and pyrexia. An X-ray picture obtained, when he was transferred to the Clinic, showed a large collection of fluid occupying the lower part of the left side of the chest (a). At operation this was found to be an unusually large abscess within the lung. Complete recovery followed drainage (b).

FIG. 3.
LOBECTOMY FOR UNILOBAR BRONCHIECTASIS.

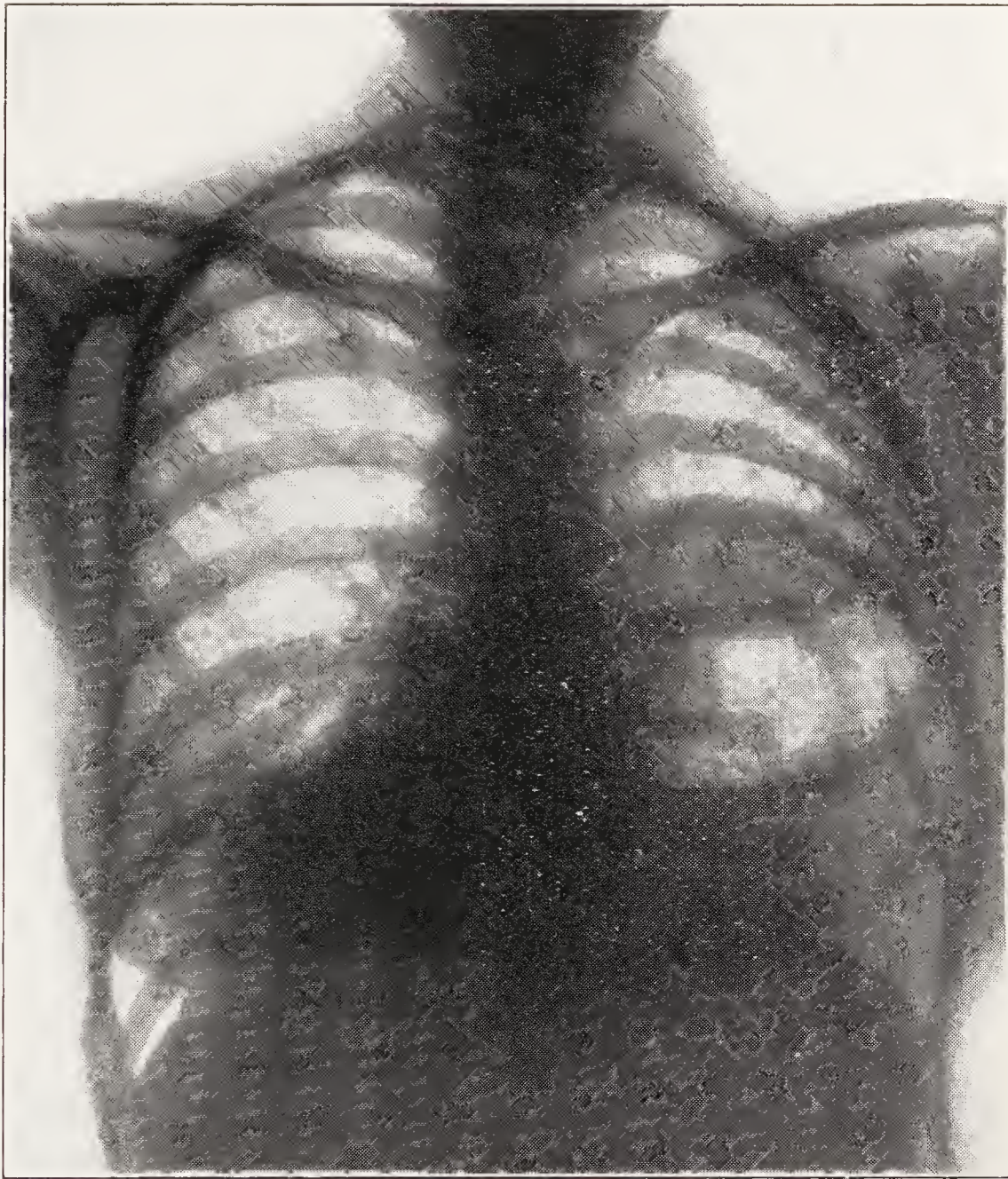


(a)

(b)

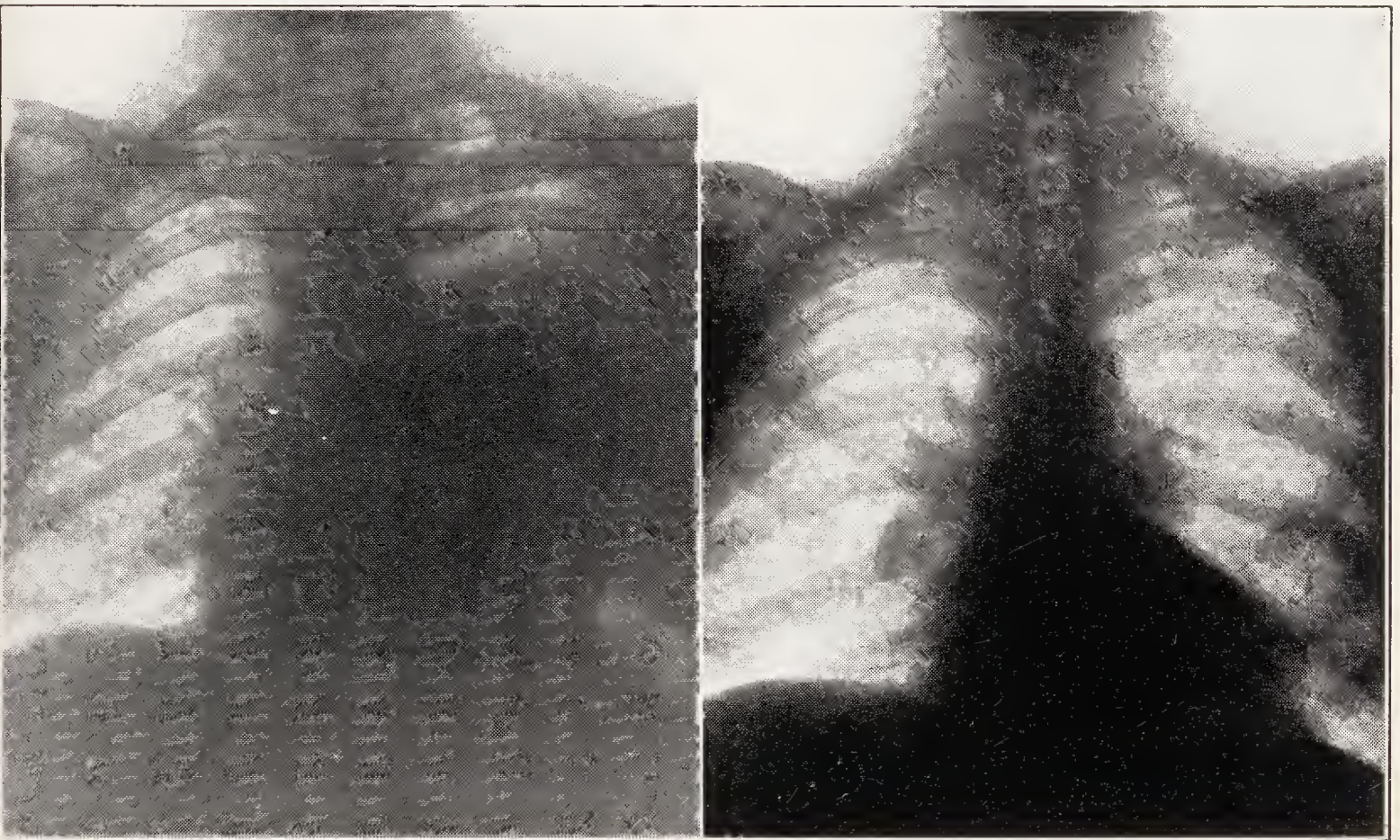
A young miner had suffered from occasional attacks of hæmoptysis and on several occasions there had been periods during which foul sputum was expectorated. He had been for a while in a sanatorium, where it was decided that he was not suffering from tuberculosis. Examination with the aid of Lipiodol demonstrated that there was bronchiectasis present and that this was confined to the lower lobe of the left lung (b). The affected lobe was removed at operation. Some months later the patient was able to return to work in good health.

FIG. 4.
CONGENITAL LUNG CYST.



A young woman had during the previous few years been operated upon on several occasions in different parts of the country for a supposed empyema. On admission to hospital, although the wounds of the previous operations were soundly healed, she was coughing up about half a pint of foul sputum each day. X-ray examination revealed the presence of a cyst (Fig. 4) in the lower and back part of the right lung. This was removed and the defect in the chest wall closed in several stages, the patient eventually returning home soundly healed and in good health.

FIG. 5.
MEDIASTINAL ABSCESS : DRAINAGE : RECOVERY.

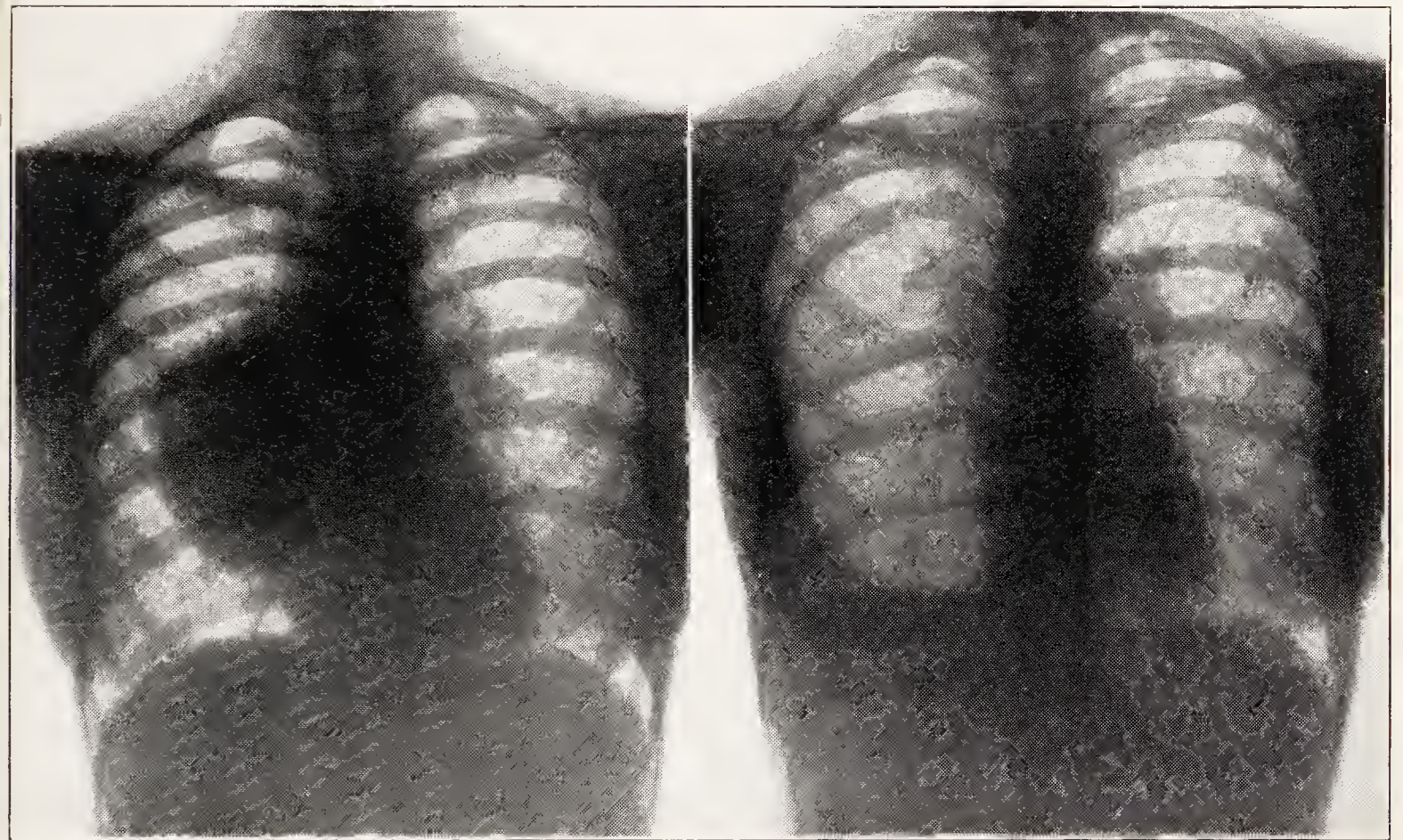


(a)

(b)

A heavily built young man sustained a fracture in the vicinity of the second left costo-chondral junction. About ten days later he was admitted to hospital with a high temperature and a swelling on the left side of the chest. X-ray examination showed a large shadow continuous with that of the heart occupying the middle of the left side of the chest (a). At operation a large mediastinal abscess was drained and a complete recovery followed (b).

FIG. 6.
DERMOID TUMOUR OF THE MEDIASTINUM.



(a)

(b)

A young woman had suffered from coughing and the expectoration of slimy sputum for a few months prior to admission. X-ray examination showed a large shadow bulging from the mediastinum into the right side of the chest (a). At operation this mass was found to be a dermoid tumour of the mediastinum and was removed with complete success, the patient subsequently obtaining work as a canteen worker. The condition of the chest after operation is seen in (b).

Report of Diabetic Clinic.

SIR,

I have pleasure in submitting a report on the activities of the Out-patient Diabetic Clinic at the Newcastle General Hospital for the years 1936 and 1937 up to 1st March.

For this period 85 patients are on the books of the Clinic, of whom females number 60 and males 25.

75 of these patients are regular attenders, the usual interval between visits being three weeks. 66 patients are on insulin and with a very few exceptions are supplied with it by the Hospital. There is very little trouble with the injections and only one sore arm has occurred during the period. The diets are as simple as possible, scales being supplied for weighing bread, etc.

Five patients have pulmonary tuberculosis but with one exception this was present before they started to attend. Only one case of peripheral neuritis has occurred.

The age groups are rather unusual as will be seen from the following table ; the largest number of cases fall between the ages of 50 and 70. Nearly all of these are women.

AGE GROUPS.

AGE.	0-10.	11-20.	21-30.	31-40.	41-50.	51-60.	61-70.	71-80.	Total.
No. of patients ..	0	5	8	7	14	25	22	4	85

Ten clinic patients died during the period and are not included in the above figures.

The facts are as follows :—

SEX.	AGE.	CAUSE OF DEATH.
M.	66	Not known.
F.	71	Carcinoma of gall bladder.
F.	65	Heart failure, hypertension.
F.	53	Diabetic coma, insulin stopped at home.
F.	57	Diabetic coma, cellulitis of leg.
M.	27	Diabetic coma, died at home.
F.	14	Diabetic coma, insulin stopped at home.
M.	61	Gangrene of leg and hemiplegia.
F.	70	Gangrene of leg.
F.	67	Arterio sclerosis, hypertension.

W. G. A. SWAN,

*Medical Registrar and
Physician in charge of the Diabetic Clinic.*

*Newcastle General Hospital,
15th April, 1937.*

MAINTENANCE IN OTHER INSTITUTIONS.

Nine persons were maintained in various special institutions in different parts of the country during the year. The details are as follows :—

Institution.	M.	F.	Type of Case.
Home for Epileptics, Maghull	2	1	Epileptic.
St. Elizabeth's School for Epileptics, Much Hadham .....	....	1	Epileptic.
St. Vincent's Hospital for the Dying, Liverpool .....	....	1	Advanced Phthisis.
St. John's Institution for the Deaf and Dumb, Boston Spa .....	....	1	Blind, Deaf and Dumb.
St. John's Home, Birmingham .....	....	1	Deformity.
Hospital of St. John of God, Scorton.....	*2	....	Cripples.
TOTAL	4	5	

* 1 Case died 10th May, 1936.

**REPORTS OF THE VETERINARY OFFICER
AND INSPECTOR OF PROVISIONS,
AND OF THE INSPECTOR UNDER THE FOOD AND
DRUGS ACTS (CHIEF SANITARY INSPECTOR).**

VI.—FOOD.

**BOVINE TUBERCULOSIS.
INSPECTION OF MEAT AND PROVISIONS.
INSPECTION OF FOOD AND DRUGS.**

BOVINE TUBERCULOSIS, AND THE INSPECTION OF MEAT AND PROVISIONS AND FOOD AND DRUGS.

TUBERCULOUS MILK.

During the year 376 samples of milk were taken for bacteriological examination, 10 of which were reported by the Bacteriologist to contain tubercle bacilli. The positive samples were from the supplies of seven different farms, six of which were situated in the County of Northumberland, and one in the County of Durham.

The following table shows the percentage of milk samples found to contain tubercle bacilli during the past 17 years :—

Year.	Percentage of Samples found Tuberculous.
1920.....	6.3
1921.....	5.5
1922.....	7.0
1923.....	4.5
1924.....	3.2
1925.....	8.0
1926.....	4.0
1927.....	3.7
1928.....	3.7
1929.....	8.7
1930.....	4.2
1931.....	3.7
1932.....	1.8
1933.....	2.0
1934.....	2.6
1935.....	3.4
1936.....	2.7

NOTE :—Figures relating to the years 1907–1919 are given in the Annual Report for the year 1932.

Report of the
Veterinary Officer, Inspector of Meat, etc.

TO THE MEDICAL OFFICER OF HEALTH.

I have pleasure in submitting the following report which includes the work of inspection under the Public Health Acts during the year 1936.

Tuberculosis.

During the year, six animals, housed in registered cowsheds within the City, were found affected with one of the forms of the disease which required them to be dealt with under the Tuberculosis Order of 1925.

The animals, five of which were giving tuberculous milk, were subsequently slaughtered and the owners compensated according to the valuation before slaughter, as agreed upon by the Veterinary Officer, on behalf of the Corporation, and the owners, in accordance with the Order. Upon examination of the carcasses and internal organs, the disease in one case was found to come within the category of "tuberculosis not advanced," as defined by the Order, whilst in the remaining five, the animals were found to have been suffering from "tuberculosis advanced," necessitating the condemnation and destruction of the entire carcass and organs of each as unfit for human consumption.

When the amounts paid, comprising compensation to the owners, costs for cartage and slaughtering, commission on sales, etc., were deducted from the total obtained through the disposal of the carcasses, hides, offals, together with the percentage recoverable from the Ministry of Agriculture, etc., there remained a balance of £2 18s. 0d. in favour of the Corporation on the administration of the Tuberculosis Order during the year.

In the course of milk and meat inspection within the City during the year, 1,291 animals were found on slaughter to be affected with the disease, this being an increase of 12.55 per cent. as compared with the number found diseased during the previous year.

In 984 cases some part of the carcass or internal organs of each was condemned and destroyed as diseased, whilst in the case of each of the remaining 307 animals it was found necessary, owing to the extent and distribution of the disease, to destroy the entire carcass and internal organs.

The Milk and Dairies Order of 1926.

Within the City there are 22 cow-keepers, registered as occupying 22 premises; and on the registered premises there is a total of 35 cowsheds in which are housed 515 milch cows.

During the year, 210 visits were made for the purpose of inspecting the animals, buildings, conditions as to cleanliness, etc.

In addition to the six tuberculous animals previously referred to, four milch cows within the registered sheds were found suffering from mastitis and other illnesses. As with the tuberculous animals, it was found necessary in one case, immediately the presence of disease was detected clinically, to adopt precautionary measures by excluding the milk in question from the public supply. When a sample of milk from this animal was examined microscopically, the mastitis was found to be due to streptococcal infection. In each of the three remaining cases the animal, although not affected with any condition likely to contaminate the milk supply, was, however, suffering from traumatic or other disease, necessitating its disposal by slaughter.

The Milk (Special Designations) Order of 1936.

The above-named Order, which came into operation on 1st June, 1936, revoked the *Milk (Special Designations) Orders* of 1923 and 1934. The designations now prescribed for the various grades of milk are generally recognised as an improvement on those prescribed under the revoked Orders. The latter comprised "Certified," "Grade A (Tuberculin tested)" and "Grade A;" and it was "Grade A," although inferior to the other two in respect of possible freedom from tuberculosis infection, which was commonly believed to be the best milk of all.

The special designations which may now be used in relation to milk are :—

- i. Tuberculin Tested ;
- ii. Accredited ; and
- iii. Pasteurised.

TUBERCULIN TESTED MILK is milk from cows which have passed a veterinary examination and a tuberculin test ; it is bottled on the farm or elsewhere and it may be raw or pasteurised. If bottled on the farm, it may be described on the bottle caps or cartons as Tuberculin Tested Milk (Certified). If pasteurised it is described as Tuberculin Tested Milk (Pasteurised). It must satisfy certain bacteriological tests.

ACCREDITED MILK is raw milk from cows which have passed a veterinary examination ; it is bottled on the farm or elsewhere. It must satisfy the same bacteriological tests as raw tuberculin tested milk, and must not be treated by heat.

PASTEURISED MILK is milk which has been retained at a temperature of 145° to 150° F. for at least thirty minutes ; and does not contain more than 100,000 bacteria per millilitre.

It is unlawful for any person to use any of the above designations unless he holds a licence from the appropriate Licensing Authority authorising him to do so.

Before granting Producers' Licences for " Tuberculin Tested " and " Accredited " milks, the Local Authority requires to be satisfied that the structure and arrangement of cowsheds and dairies, so far as lighting, ventilation, cleansing, drainage and water supply are concerned ; the precautionary methods during milking ; the cooling, storing and handling of milk ; the apparatus for the sterilising of utensils ; the condition of the herd, ascertained by clinical (veterinary) examination and, where necessary, the application of the tuberculin test and the results of the bacteriological examination of one or more samples of the milk, are such as to make it reasonably probable that the milk will regularly comply with the prescribed tests at all stages and at all times of the year.

DISEASED COWS FOUND IN REGISTERED PREMISES WITHIN THE CITY.

Year.	No. of Cow-keepers.	No. of Registered Premises.	No. of Registered Cowsheds.	No. of Milch Cows in City.	No. of Diseased Cows.				
					Tuberculosis.		Other Diseases.		Destroyed (under the Tuberculosis Order, 1925)*
					Of Udder.	Other than Udder.	Udder.	Other than Udder.	
† 1920	26	26	40	565	....	....	....	....	....
1921	25	25	38	575	....	....	....	....	....
1922	25	25	39	489	....	....	....	....	....
1923	25	25	39	484	2	....	8	....	1
1924	22	22	34	436	3	2	2	....	4
1925	21	21	33	337	9	....	1	....	4*
1926	20	20	31	410	5	2	1	3	5*
1927	18	18	29	334	2	4	2	3	6*
1928	19	19	31	308	3	1	1	3	4*
1929	19	19	30	258	4	1	1	2	4*
1930	17	17	28	251	2	3	1	4	4*
1931	16	16	27	243	4	7	1	3	9*
1932	16	16	27	246	4	2	7	3	6*
1933	16	16	27	243	1	....	5	4	1*
1934	14	14	22	223	3	2	6	4	5*
1935	23	23	38	504	3	3	3	2	6*
1936	22	22	35	515	5	1	1	3	6*

† Figures relating to the years 1907–1919 are given in the Annual Report for the year 1932.

Anthrax.

During the past thirty years, the City has been fortunate in not being visited by this disease on more than eight occasions. In each of the years 1907 and 1908, two outbreaks occurred and in the years 1919 and 1925, one outbreak, involving only one animal in each case, occurred. Then after a period of nearly ten years' freedom, the disease occurred in 1935, and again during the year under report which is briefly referred to as follows :—

On 18th July, 1936, a veterinary practitioner notified suspected anthrax as existing in a cow found dead on a farm within the district. Within two hours of receiving the notification, the farm in the Kenton area was visited when blood smears, taken from the dead animal and examined microscopically, disclosed the presence of anthrax bacilli, thus confirming the original report. The usual procedure under the Anthrax Order, 1928, was then followed, including the declaration of the premises as an infected place ; notifying the Medical Officer of Health and also the Ministry of Agriculture and Fisheries ; segregation of non-infected animals ; arranging for the disposal of the carcass ; cleansing and disinfection, besides making the necessary inquiries as to the origin of the outbreak.

Within forty-eight hours of the death of the cow referred to, a horse which had been grazing in the same field was found dead. An examination of material, microscopically, disclosed the fact that the horse also had died from anthrax. The carcass of this animal was dealt with in the same manner as the cow carcass.

Fortunately, the milch cows on the farm were far removed from the field in which the six non-lactating cows and one horse—involved in the outbreak—were grazing.

On making inquiries as to the possible source of origin, it was found that whilst no previous sudden or unexplained deaths had occurred on the farm in the past and that the animals involved had not received any artificial feeding stuff or any foreign litter, the field to which these animals were confined had been dressed with artificial manure of animal origin. Having regard to all the circumstances, the artificial manure used for dressing the field in question was suspected as a possible source of infection.

In the Ministry of Agriculture and Fisheries' Report, by the Chief Veterinary Officer, of Proceedings under the Diseases of Animals Acts for the year 1935, it is stated that the 320 outbreaks of anthrax in Great Britain unconnected with any previous case may have originated from the following sources :—

Effluent from tanyards, etc., causing contamination of streams	...	...	...	...	...	9
Feeding infected carcasses or offals to animals	...					2
Use of imported feeding stuffs	...	...	...	...		208
Use of artificial manure of animal origin on the land						25
Simultaneous use of both imported feeding stuffs and artificial manures	...	...	...	...	...	49
No explanation available	...	...	...	...		27

Within Great Britain, 468 outbreaks of the disease were confirmed, in which 549 animals were attacked, as compared with 386 outbreaks during the previous year, in which 443 animals were attacked.

INSPECTION OF MEAT AND OTHER FOODS.

The number of animals slaughtered within the City for food purposes during the year was 257,343. Whilst there were 1,013

more cattle, 2,206 more pigs, there were 120 fewer calves and 637 fewer sheep slaughtered than during the previous year, as indicated in the following table :—

ANIMALS SLAUGHTERED ON LICENSED PREMISES WITHIN THE CITY.

YEAR 1936.	1935.	1934.	1933.	1932.
Horses 1,565	1,610	982	950	1,266
Cows 3,005	27,486	21,623	20,278	18,895
Heifers.. 15,760				
Bulls 600				
Bullocks 9,134				
Calves 7,358	7,478	4,705	3,475	2,976
Sheep 172,844	173,481	163,556	167,653	186,662
Pigs 47,077	44,871	37,737	41,281	48,642
Total Animals.... 257,343	254,926	228,603	233,637	258,441

Five hundred and seventy-one animal carcasses, together with 2,168 lbs. of meat (excluding offal, etc.) were condemned and destroyed as being unfit for human consumption, as compared with $417\frac{1}{2}$ animal carcasses and 3,170 lbs. of meat condemned and destroyed during the previous year. Of the 571 carcasses, $307\frac{1}{2}$ were condemned on account of tuberculosis, as compared with $219\frac{1}{2}$ carcasses condemned on account of that disease out of the previous year's total of $417\frac{1}{2}$ carcasses. It is of interest to note that of beef alone, the total number of carcasses condemned for tuberculosis during the year under report is greater than that of the previous year by 51.57%, and is the highest since the year 1919.

Of the 47,077 pigs slaughtered, 725 were found affected with tuberculosis, which proportion—approximately 15 per 1,000—is practically the same as that of the pigs found tuberculous amongst those slaughtered during the previous year. As occurred during the previous year, the percentage of cases in which lesions of the disease were found confined to the region of the throat was high, for, out of the 725 found affected, in 606, or 83.59 per cent., were the lesions so localised.

Cattle, Calves and Pigs Slaughtered within the City. (See also previous Table).	Number of Animals found Diseased, Unsound or otherwise unfit for Human Consumption.		Number of Animals found Tuberculous.	
	Whole Carcasses Condemned.	Parts or Organs Condemned.	Whole Carcasses Condemned.	Parts or Organs Condemned.
Year 1936.	Year 1936.			
Cows 3,005	163	144	156	126
Heifers..... 15,760	47	104	44	80
Bulls 600	4	17	3	14
Bullocks 9,134	41	66	38	42
Sex not known.... ....	....	264	....	54
Totals 28,499	255	595	241	316
Calves 7,358	36	7	8	1
Pigs 47,077	129	1,166	58	667

CARCASSES OF BEEF CONDEMNED WITHIN THE CITY DURING THE
PAST SEVENTEEN YEARS.

Total condemned.		Numbers condemned on account of Tuberculosis.	Percentage Tuberculous.
Year.	Carcasses.	Carcasses.	Per Cent.
*1920	198	171	86.36
1921	90	78	86.66
1922	85	79	92.94
1923	69	58	84.05
1924	66	61	92.42
1925	157	130	82.80
1926	126	102	80.95
1927	123	107	86.99
1928	115	109	94.78
1929	124	118	95.16
1930	147	124	84.35
1931	117	94	80.34
1932	135	120	88.89
1933	128	116	90.62
1934	186	158	84.94
1935	182	159	87.35
1936	255	241	94.51

NOTE.—The above refers to whole carcasses and quarters, but does not indicate the total number of animals found tuberculous, and therefore does not include those carcasses in which only the organs or parts were found diseased and condemned. See preceding table.

*Figures relating to the years 1907–1919 are given in the Annual Report for the year 1932.

Public Health (Meat) Regulations of 1924.

For the purposes of these Regulations, 6,781 visits were made to meat and provision shops, restaurants, stalls, vehicles, etc., and as a result, 28 contraventions were found requiring to be dealt

with. In two instances only were further proceedings necessary, the results of which appear on page 198, under the heading "Contraventions."

INSPECTION OF CARCASSES SENT INTO THE CITY FROM OUTSIDE DISTRICTS DURING THE YEAR 1936, INCLUDING THE CARCASSES OF ANIMALS TAKEN UNDER THE TUBERCULOSIS ORDER, 1925, BY OTHER LOCAL AUTHORITIES AND SLAUGHTERED WITHIN THE CITY.

Material Examined.	Condition Found.	How Dealt with.
*4 Cow carcasses & Organs	Tuberculosis	Carcasses and organs condemned.
*1 Cow Carcass and Organs	„	Lungs and udders condemned.
*1 „ „	„	Head, lungs, mesenteric fat and udders condemned.
*1 „ „	„	Head, lungs and mesenteric fat condemned.
*1 „ „	„	Lungs and udders condemned.
1 „ „	Normal	Passed.
1 Bullock Carcass and Organs	„	„
1 Heifer Carcass and Organs	Congestion	Liver condemned.

* Slaughtered under the Tuberculosis Order, 1925, certificate of examination in each case being sent to the local authority concerned.

Imported Foodstuffs.

During the year, 210 vessels carrying meat and other foods from Denmark, Holland, America, Canada, Australia, Russia and Madagascar, arrived at the Quayside, this being a decrease of three as compared with the number of arrivals during the previous year.

Four hundred and sixty-four visits were made to the wharves and vessels alongside, 2,401 packages, containing meat, etc., being opened and examined. Regarding these visits, seven were in response to official notices received from the Customs House concerning foodstuffs detained for our inspection and certification. Both before and while being discharged from the vessel, it is not practicable to make more than a general survey or superficial inspection of frozen beef quarters and carcasses of mutton, but these, as well as imported meat arriving by rail within the City, are subjected to supervision and inspection within the cold storage depots and wholesale meat shops.

Caseous Lymphadenitis.

During the year, of 26,314 carcasses of mutton, comprising seven separate consignments arriving at the Quayside direct from Australia, 479 were examined, none being found affected with the disease, as compared with the arrival of 17,225 Australian carcasses, comprising eight separate consignments, during the previous year, of which 505 were examined, two being found diseased.

Foreign Meat, etc., arriving by Vessel.*Salted Meat, Offal, etc.*

PORK.—30 barrels.

Offal (barrels).—864 feet, 1,249 maws, 493 heads, 31 cheeks and 7 casings.

Frozen Meat.

BEEF.—15,835 fore and hind quarters and 16,269 crops.

(Packages).—1,358 boneless and 15 shin beef.

Offal (Packages).—25 tails, 4,017 kidneys, 3,153 livers, 15 hearts, 10 skirts, 160 (mixed) offals, 164 tripes, 5 heads, and 18 tongues.

VEAL.—400 hind quarters and 100 crops and 172 packages.

Offal (Packages).—5 kidneys, 3 hearts, 871 livers, 3 tongues and 15 (mixed) offals.

MUTTON AND LAMB.—26,314 carcasses.

Offal (Packages).—60 livers and 5 tongues.

PORK.—3,844 carcasses and 455 sides. (Packages).—316 cuts.

Offal (Packages).—15 kidneys.

Other Goods.

561,754 sides Danish, Dutch and Canadian bacon. (Cases).—1,335 American bacon and hams, 31,132 tinned meats and 5 sausages.

NUMBER AND ORIGIN OF VESSELS ARRIVING WITH FOOD.

Denmark.	Holland.	America.	Canada.	Australia.	Russia.	Mada-gascar.
106	71	8	14	8	2	1

Exported Foodstuffs.

The number of horses slaughtered within the City, for the purpose of the carcasses being exported for consumption on the Continent, was 1,565 or 45 fewer than during the previous year.

NUMBER OF VISITS AND INSPECTIONS OF PREMISES DURING THE YEAR 1936.

	Central Markets.			Meat Shops.		Fish Shops.		Provision Shops.						
Slaughterhouses.	Meat and Provisions.	Fruit and Vegetables.	Fish.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Wharves and Vessels.	Cold Stores.	Restaurants.	Stalls, Carts, etc.	Food Preparing Factories.	Bakeries.
17,588	450	349	336	3450	720	27	2	4	464	3	2	2052	103	2

TOTAL CARCASSES, &C., DESTROYED AS BEING UNFIT FOR

[illegible]

HUMAN CONSUMPTION DURING THE YEAR 1936.

Heads.			Plucks.			Sets; Stomachs and Intestines.		Fat.		Udders.		Ox Tails.	Ox Tongues.	Griskins.	Sheep Sweetbreads.
Calf.	Sheep.	Pig.	Calf.	Sheep.	Pig.			Ox.	Pig.	Cow.	Pig.				
...	...	564+42 halves	1	...	69	5	2	41	...	2	...	...	...	...	...
...
...	2	1	...	...	...	...	...	...	...	...	...	...
...
...
...	1	...	50	...	...	...	...	...	...	...	...	...	...
...	1	2	34	...	...	...	...	...	...	...	...	...	...
...	2	...	...	...	...	...	...	...	...	...	...
...	2	...	...	...	...	...	...	...	...	...
...	13	...	...	...	...	...	...	...	...	...	...
...	5	1	...	...	...	...
...
...
...	13	4	...	...	...	...	...	...	...	...	...	...
...	4	28	...	...	...	...	...	...	...	...	...	...
...
...
2	48	24 cwts.	...	153	17	...	...	...	265 lbs.	...	...	25+ 15 lbs.	12 lbs.	1 cwt	4 lbs.
...	688	...	...	...	...	...	...	...	...

POULTRY, GAME, FISH, FRUIT AND VEGETABLES, PROVISIONS, &c., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION
DURING THE YEAR 1936.

Cause of Unfitness.	Poultry and Game.	Fish.	Fruit and Vegetables.	Provisions, etc.
Unsound and Unwholesome.	Chickens 10	Codlings..... 532	Bilberries, 381 chips	Bacon lbs. 42
	Ducks 1	Haddocks 35	Black Currants, 94 chips	Biscuits 32
	Partridges..... 2	Halibut, 1 + 101	Carrots, 29 packages, + 4,368	Raisins 215
	Pheasants 7	Ling 17	Cauliflowers, 18 crates	Rice, 81 bags
	Rabbits .....182	Plaice, 6 boxes + 360	Grape Fruit, 166 cases	TINNED GOODS.
	Turkeys 2	Salmon 30	Lemons, 5 cases	Apples lbs. 1
		Skate 123	Lettuce, 119 crates	Apricots 3
		Trout..... 195	Oranges, 759 cases	Bacon 4
			Pears, 1 box	Bilberries 1
		SHELL.	Potatoes, 50 packages + 10 tons 6 cwts.	Catfish Fillets 1
		Craw Fish 120	Tomatoes, 236 packages	Corned Beef..... 2,486
		Shrimps, 2 bags		Crab 1
				Ham 1,968
				Loganberries 95
				Lunch Tongue..... 1,523
				Milk 152
				Mutton 42
				Oranges..... 75
				Pears 3
				Pineapple Cubes 28
				Plums 850
				Pork 936
				Pork Brawn..... 6
				Prawns 48
				Roast Duck and Ham 1
				Salmon 57
				Sausage 824
				Tomatoes 5
				Veal 1,146
				Veal and Ham 1

Total Weight of Meat and Other Foodstuffs Condemned.

The approximate total weight of meat and other foodstuffs condemned during the year was 102 tons 10 cwts. 3 qrs. 17 lbs., comprising :—

	tons.	cwts.	qrs.	lbs.
Beef, Mutton, Veal, Pork	83	4	3	5
Offal and Provisions.....	19	6	0	12
	102	10	3	17

Microscopical Examinations.

During the year, microscopical examinations were carried out as an aid to, or confirmation of, diagnosis in connection with 36 cases under investigation.

The material examined comprised specimens of milk, blood and swabs taken from the throats of cows. Of the samples of milk examined for tuberculosis, five were found positive and twelve negative ; and of the throat swabs examined for the same disease, one was positive and one negative. Of the specimens of blood and other tissues examined for anthrax two were found positive and fourteen negative. A specimen of milk examined for organisms other than tuberculosis, was found positive.

MICROSCOPICAL EXAMINATIONS.

	Specimens Examined.	Result of Examination.	
		Positive.	Negative.
Samples of Milk examined for Tuberculosis	17	5	12
Throat Swabs examined for Tuberculosis..	2	1	1
Blood, etc., examined for Anthrax.....	16	2	14
Milk examined for Organisms other than Tuberculosis	1	1	....
	36	9	27

Slaughterhouses.

During the year, 75 separate premises were licensed for slaughtering purposes, this being one more than during the previous year.

Of the 75 licensed premises, 14 were vacant during the whole or part of the year and 22 were occupied by wholesale firms, the remainder being occupied by retail butchers.

Of the total animals dealt with within the City, 183,645, or 71.36 per cent., were slaughtered by wholesalers, the remaining 73,698, or 28.64 per cent., being slaughtered by retailers.

Licensed Slaughtermen.

Under the Slaughter of Animals Act, 1933, slaughtermen's licences were granted during the year to 14 persons whose applications were approved by the Health Committee.

The Merchandise Marks Act, 1926.

In accordance with the procedure outlined in section 2 (1) of the above-named Act, Orders have been made—by His Majesty in Council—known as the Merchandise Marks (Imported Goods) No. 3 Order, 1934; No. 5 Order, 1934; No. 7 Order, 1934; and No. 8 Order, 1931, relative to bacon and ham; dead poultry; certain classes of chilled, frozen, boneless and salted meat and edible offals; and salmon and sea trout, respectively, each of which, subject to the provisions contained in certain Merchandise Marks (Imported Goods) Exemption Directions, makes it unlawful to import into or sell or expose for sale within the United Kingdom any of the first three mentioned classes of foodstuffs or to sell or expose for sale within the United Kingdom imported foodstuffs of the last mentioned variety, unless they bear an indication of origin as described in the respective Orders referred to.

One of the objects of the Orders is to ensure that when imported meat, bacon or ham, poultry or fish is exposed for sale (whether whole, jointed, in pieces or cuttings on trays or in packages) it shall be so readily identifiable by means of marks, labels, tickets or notices, as the case may be, that a would-be purchaser could scarcely fail to gain a correct impression as to its origin.

As the Order relative to meat is somewhat complicated, because of the considerable variety of carcasses, joints and offals involved, an explanatory letter was prepared as a guide and sent to the wholesale and retail meat traders within the City.

Rats and Mice (Destruction) Act, 1919.

During the year, 173 visits were made to premises in respect of 135 complaints received, 231 premises, including others than those complained of, being inspected and dealt with.

Of the 231 separate premises, rats were found infesting 221, the remaining 10 being found free from any evidence of infestation. As will be seen in the following table, the premises most frequently invaded by the pests were dwellings, allotments and shops, these accounting for a little more than 84 per cent. of the whole.

As pointed out in previous reports, many occupiers have the impression that it is only necessary to lay poison bait to solve the problem, no attention being given to the question of prevention. The rat problem, so far as buildings are concerned, is one that invariably involves the question of construction and repair. With the view of obtaining successful results and efficient administration, it has always been the practice—within the City, at least—to place before the public, so far as possible, the best known means of prevention, besides educating the individual occupiers as to the advantages of rendering premises independent, structurally, one from the other, and of operating simultaneously.

RATS AND MICE (DESTRUCTION) ACT, 1919.

Complaints received	135
Number of premises inspected and dealt with in connection with the above	231
Number of premises infested with rats.....	221
Number of visits	173
KIND OF PREMISES DEALT WITH.	
Allotments	51
Bakehouses	2
Builders' Yards	2
Dwellings.....	105
Factories	2
Garages	3
Halls	3
Hospitals	2
Hostels.....	2
Hotels	3
Housing Estate	1
Offices	2
Poultry Runs	1
Restaurants	4
Shops (food)	24
Shops (other than food)	14
Warehouses	3
Waste ground	4
Wharfs	2
Workrooms	1
Total	231

CONTRAVENTIONS.

Offence.	No. of Cases.	Action taken, etc.
<i>The Public Health Act, 1875.</i> Deposited for the purpose of preparation for sale within a slaughterhouse, one carcass of cow beef which was diseased	2	Two persons were charged, one being fined £10 and £2-2-0 costs, the case against the other being dismissed.
<i>Public Health (Meat) Regulations of 1924.</i> Failing to give notice to the Local Authority of disease in the carcass and internal organs of a cow	2	In one case offender fined £5 and £1-1-0 costs, the other being dismissed.
Meat conveyed in dirty vehicles	8	Offenders cautioned.
Meat, unprotected, lying on floor	6	Offenders cautioned.
Dirty butchers' shops	4	Offenders cautioned.
Using for the preparation and storage of food a room with which a w.c. directly communicated	3	Offenders cautioned.
Meat exposed outside shop windows	2	Offenders cautioned.
Meat improperly covered during transport	1	Offender cautioned.
Premises used for domestic washing where food is prepared for sale	1	Offender cautioned.
Blowing mutton carcasses with the breath	1	Offender cautioned.
<i>Newcastle upon Tyne Slaughterhouse Bye Laws.</i> Dirty slaughterhouses	3	Offenders cautioned.
<i>Merchandise Marks Act, 1936.</i> Imported meat, not labelled as such, exposed for sale	3	Offenders cautioned.

THOMAS PARKER, F.R.C.V.S.,

*Veterinary Officer.**Town Hall,**Newcastle upon Tyne,**31st March, 1937.*

Samples taken for Analysis during the Year 1936.

ARTICLE.	No. of Samples obtained.			Result of Analysis.		Action Taken.				REMARKS.	
	Formal.	Informal.	Total.	Genuine.	Not Genuine.	Prosecutions	Convictions.	Cases Dismissed.	Cases Withdrawn.		
New Milk.....	724	4	728	669	59	24	3	20	1	In 29 of the remaining 35 cases (of the 59 samples "not genuine") the vendors were cautioned by order of the Health Committee, and in 6 no action was taken, these being "appeal to cow" samples, etc.—not for proceedings.	
Skimmed Milk	9	....	9	8	1	1	....	....	1
Condensed Milk	6	6	6	....	....	....	....	....
Cream (Tinned and Fresh).....	10	10	10	....	....	....	....	....
Butter	17	17	17	....	....	....	....	....
Margarine	17	17	17	....	....	....	....	....
Lard	1	1	1	....	....	....	....	....
Cocoa	2	2	2	....	....	....	....	....
Tea	5	5	5	....	....	....	....	....
Coffee	1	1	1	....	....	....	....	....
Sugar (including "Icing Sugar").....	6	6	6	....	....	....	....	....
Baking Powder	1	1	1	....	....	....	....	....
Custard Powder	1	1	1	....	....	....	....	....
Jams, Jellies and Marmalade	14	14	14	....	....	....	....	....
Lemon Curd	2	2	2	....	....	....	....	....
Rice, Ground Rice, Tapioca, Semo- lina, Sago and Corn Flour.....	6	6	6	....	....	....	....	....
Flour, Wholemeal and Oatmeal.....	3	3	3	....	....	....	....	....
Split Peas, Barley, Lentils and Haricot Beans.....	4	4	4	....	....	....	....	....
Herbs (Sage)	1	1	1	....	....	....	....	....
Tinned Fruits.....	9	9	9	....	....	....	....	....
Dried Fruits (including Currants and Raisins)	13	13	13	....	....	....	....	....
Candied Peel, Glacé Cherries, Almonds (Ground and Whole)	18	18	18	....	....	....	....	....
Mincemeat	5	5	5	....	....	....	....	....
Soups (Tinned)	4	4	4	....	....	....	....	....
"Potato Crisps"	2	2	2	....	....	....	....	....
Vinegar, Mustard and Pepper	6	6	6	....	....	....	....	....
Meat Pastes	1	1	1	....	....	....	....	....
Tinned Fish, (Salmon and Brisling).	2	2	2	....	....	....	....	....
Biscuits (Assorted).....	2	15	17	15	2	1 sample of Tinned Brisling contained a negligible quantity of tin compounds. The vendors of the 2 samples "not genuine" were cautioned. (For further information see p. 200).	
Bacon	1	1	1	The samples "not genuine" all contained sulphur dioxide, either undeclared or in excess of the limit allowed. The remaining 4 samples (of those "not genuine") were taken informally (not for proceedings) (See also p. 200).	
Cheese	1	1	1	....	....	....	....	....
Tripe	3	3	3	....	....	....	....	....
Sausage	7	30	37	26	11	7	4	2	1		
Table Jellies (and Gelatine)	2	2	2	....	....	....	....	....
Golden Syrup	1	1	1	Most of the samples were poor in their fat content. No action was taken, there being no fixed standard for "ice cream."	
Ice Cream	12	12	12	....	....	....	....	....
<i>Household Drugs, etc. :—</i>											
(Including Glauber Salt, Gregory Powder, Compound Liquorice Powder, Cascara Sagrada, Syrup of Figs, Castor Oil, Camphor- ated Oil, Syrup of Rhubarb, Tincture of Rhubarb, Paregoric, Syrup of Squills, Glycerine, Cream of Tartar, Tartaric Acid, Liquid Paraffin, Chemical Food, Crushed Linseed, Eucal- yptus Oil, Composition Essence, Sulphur and Zinc Ointments, Cod Liver Oil (and "extracts"))	53	53	53		2 samples of Glauber Salt had effloresced and were not in accordance with the requirements of the British Pharmacopœa (1932), indicating storage in a place where the temperature had been too high. The attention of the vendors was drawn to the matter.
Wines	8	8	8	The sample "not genuine" was one of Gin containing 8.76% excess water. This was taken informally, and a subsequent (formal) sample being genuine, the case was met by a caution.	
Spirits (Whisky, Rum and Gin).....	1	8	9	8	1	....	....	....	....
TOTALS	743	295	1,038*	964	74	32	7	22	3	Amount of Penalties :—£19 10s. 0d.	

* Includes 158 samples taken in course of delivery (at railway stations, hospitals, etc.).

FOOD AND DRUGS ADULTERATION, Etc.

Total Samples.—The number of samples of foods and drugs obtained for analysis during the year was 1,038, as against 1,057 in 1935. They were of a varied nature, and included most articles in common use in the household. All of these were submitted to the Public Analyst, who certified that 964 were genuine and 74 not genuine.

Informal Samples.—295 informal samples were taken, as against 294 last year. Legal proceedings cannot be taken if these samples are found not genuine; this method is, however, a useful guide to the general quality of foodstuffs sold in any particular district. Any adulterated samples are followed up by “formal” or “official” samples, so that legal proceedings may be taken if necessary.

Milk Samples.—As usual, the greatest number of samples obtained has been of milk, one of the most important articles of food, and which unfortunately readily lends itself to fraudulent practices. 728 samples were taken, and of these 59 were certified to be below the minimal limits fixed by the “Sale of Milk Regulations, 1901.” Of this number 19 were deficient in non-fatty solids, 36 in milk-fat and 4 in both. The percentage of deficiency in fat varied from 0.3 to 33.3 (the average being 7.33), and of solids not fat from 0.7 to 29.7 (average 7.82).

“Appeal to Cow” Samples.—Four farms were visited and, after witnessing the milking operations, 22 samples were taken, and submitted to the Public Analyst for analysis. 18 of these were up to the standard, whilst the remaining 4 fell below. No action could be taken in respect of these 4 samples, as the milk was “as it came from the cow.” The deficiencies amounted to 12.0 and 12.6 per cent. in milk-fat and 2.3 and 3.0 per cent. in non-fatty solids, respectively.

Notwithstanding the large number of samples (1,038) of over 90 different articles of foods and drugs, it was only necessary to institute legal proceedings in 32 cases.

Samples not Genuine, etc.—The percentage of all samples not genuine to the total number taken was 7.13 (compared with 2.65 for the previous year). The percentage of non-genuine

milk samples to the total number of milk samples obtained was 8.10 (as against 1.72 in 1935). The total number of samples taken was at the rate of 3.57 per 1,000 of the population (estimated) of the City for the year 1936. This is in excess of the number suggested by the Ministry of Agriculture (viz., 3 per 1,000 of the population).

Margarine.—17 samples of margarine were purchased and analysed. All were genuine, free from preservatives, and in compliance with the requirements of the Act in all other respects.

Margarine Warehouses.—48 visits were made to the registered margarine warehouses in the City. The packages were examined as regards proper marking, and all found to comply with the Act.

Preservatives in Food.—Of the total samples obtained for analysis (1,038), only 44 contained preservative, the quantity in most instances being well within the limits allowed.

26 samples of sausage contained preservative (sulphur dioxide), the quantity in 22 instances being within the permissible limit. In the case of the remaining 4 samples (informal and formal, respectively, from each of two retailers), the vendors were summoned and fined, in each case, 20/- in respect of the excess quantity and 10/- for failing to declare the presence of the preservative. 5 vendors were summoned in respect of failure to give the necessary declaration ; one fined 20/-, one 10/-, 2 cases dismissed, and one withdrawn, the case being met by a caution.

2 samples of biscuits (“rum wafers”) taken at a warehouse in the City, were found to contain 200 and 100 parts, respectively, of boric acid, contrary to the Regulations. The firm concerned, immediately on becoming aware of the presence of the preservative, withdrew from sale and surrendered their stock of these goods for destruction. The offence was met by a caution.

OFFENCES OTHER THAN ADULTERATION.

Offence.	No. of Cases.	Action Taken, etc.
<i>Milk and Dairies (Consolidation) Act, 1915 ; Section 6.—</i> Names and addresses of vendors not inscribed upon milk vessels and/or vehicles.	2	In 1 case offender summoned ; case dismissed with a caution. The other case was met by a caution.
<i>Milk and Dairies Order, 1926 ; Section 6 (3).—</i> Selling milk without being registered for the purpose.	3	In 2 cases offenders cautioned ; in the other summoned, case dismissed with a caution.
<i>Section 28.—</i> Milk vessels not properly cleansed before being returned.	1	Offender cautioned.
<i>Section 29 (1).—</i> Churn conveying milk in course of delivery to retailer bearing the name and address of a different farmer (on lid and body of churn).	1	Offender cautioned.
<i>Section 29 (2).—</i> Milk churns in a condition contravening the Order.	3	Offenders cautioned.
<i>Section 30.—</i> Selling skimmed milk from churn and vehicle not marked with the words " skimmed milk."	1	Offender summoned ; case withdrawn.
<i>Section 33.—</i> Vehicle (barrow) used for conveyance of milk in an offensive condition (from previous conveyance of fish).	1	Offender cautioned.
<i>Milk and Dairies (Amendment) Act, 1922 ; Sections 2-3.—</i> <i>Milk and Dairies Order, 1926 ; Section 6.</i> <i>The Milk (Special Designations) Order, 1923 ; Section 3.—</i> Selling " Pasteurised " milk without being registered and licensed for the purpose.	2	Offenders cautioned.
<i>Food and Drugs (Adulteration) Act, 1928 ; Section 6 (3) (d).—</i> Margarine labelled with unauthorised descriptive names.	2	Offenders cautioned.
<i>Section 8.—</i> Wholesale margarine warehouse not registered.	1	Offender cautioned.
<i>The Milk (Special Designations) Order, 1936 ; Third Schedule, Part 1, B 3.—</i> Churns containing " Tuberculin Tested " milk forwarded unsealed.	1	Offender cautioned.
TOTAL	18	

The Public Health (Condensed Milk) Regulations, 1923-1927.

Six samples of condensed milk were obtained. All were genuine and in compliance with the Regulations.

Artificial Cream Act, 1929.

There are two premises (retail shops) on the register and, during the year, no further applications have been received for registration.

BACTERIAL IMPURITY OF MILK AND WATER.

For details of examinations under this heading see pages 104, 105 and 181.

Cleanliness of Milk Churns.—During the year 18,910 churns awaiting return to the farmers were examined at the various railway stations in the City. Of this number, 2 (from 1 dealer) were found in an uncleansed condition. The case was met by a caution.

In addition, 2,958 churns in course of transit through the City were examined ; all were found to have been rinsed as required.

Water.—Samples were collected from all parts of the City and at the water works, and examined for the presence of *bacillus coli*.

The results are described on page 105.

PREMISES ON WHICH FOOD IS PREPARED.

Bakehouses.—There are in the City 268 bakehouses, of which 45 are factories (*i.e.*, places in which mechanical power is used), and 223 are workshops.

The number of “ domestic ” bakehouses, or private dwelling houses in which the occupier makes bread for sale amongst the neighbours, is 66, a decrease of 12 as compared with 1935. Domestic bakehouses are under the same supervision as when the business is carried on in an ordinary bakehouse, and, generally speaking, are kept in a cleanly state. A few minor contraventions were found, which were immediately remedied on verbal request.

Restaurant Kitchens (including hotels, cafés and dining rooms).—Regular inspection and strict supervision are exercised over these places, in order to ensure the handling and preparation of food under hygienic conditions. The number on the register is 111 (a decrease of 4 during the year). 9 notices were served on occupiers in regard to lime-washing and general cleansing. In each case the notice was immediately complied with.

Fried Fish Shops.—The number of these is 158 (as against 161 in the previous year). For comments see “ Offensive Trades ” (Section VII.).

Manufacture and Sale of Ice Cream.—Under Section 4 of the Newcastle upon Tyne Corporation (General Powers) Act, 1935, which came into operation in August last, compulsory registration is now required of all ice cream manufacturers, vendors, dealers, and premises. Applicants who are refused registration are afforded an opportunity of appearing before the Health Committee to show cause why registration should not be refused. If aggrieved by refusal, appeal may be made to a court of summary jurisdiction.

251 applications for registration were received, of which 242 were granted by the Committee, and 9 refused owing to the unsuitability of the premises.

Of those granted, the applications were made as :—

(a) manufacturers and vendors and as owner-occupiers of the premises	40
(b) manufacturers and vendors and as occupiers	36
(c) vendors and as owner-occupiers.....	46
(d) „ „ „ occupiers.....	113
(e) street vendors	6
(f) owners of premises	1

The powers under Section 4 are strictly enforced, ensuring sanitary conditions for the preparation, storage, and handling of this delectable foodstuff. Each year consumption is increasing and, as no legal standard is fixed for the milk-fat content, it is permissible to market this commodity devoid of cream. The time is now overdue for such a standard to be fixed. 12 samples submitted for analysis were found to vary in their milk-fat content between 1.7 and 14 per cent.

The Milk and Dairies (Amendment) Act, 1922, Sec. 2, and The Milk and Dairies Order, 1926, Sec. 6.—During the year 40 applications were received for permission to retail milk, 39 being granted and 1 refused on sanitary grounds. At the close of the year there were 684 retail milk-shops in the City, including 69 belonging to the 10 larger dairy companies. Of the total, 68 were shops in which only dairy products and like commodities were retailed, 576 were shops selling other articles, and 40 were hawkers. All milk-shops and dairies were regularly inspected, and the conditions generally found to be satisfactory.

W. GRAY,

Inspector under the Food and Drugs Acts, etc.

Health Department,

Town Hall,

15th May, 1937.

**REPORT OF THE
CHIEF SANITARY INSPECTOR.**

**VII.—THE HOME AND THE
WORKSHOP.**

**NUISANCES, HOUSING, FACTORIES AND
WORKSHOPS, Etc.**

**NUISANCES, HOUSING, FACTORIES AND WORKSHOPS,
ETC.**

**The following is the
Report of the Chief Sanitary Inspector.**

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I have the honour to submit the following report on the work carried out by my section of the Department during the year 1936.

There is no outstanding feature to record. The work, by its very nature, is not spectacular, yet much solid work has been accomplished, with ensuing benefit and contentment to the community.

Inspectorial time, released in the rapid demolition of worn-out and unfit houses under Slum Clearance Orders, has been profitably directed into other channels, the result of which is reflected in the various tabular records.

The attention of the appropriate Committees has been drawn by special report to certain matters arising in connection with the holding of the Temperance Festival on the Town Moor during Race Week.

Suggestions have been made with a view to the improvement of existing arrangements with respect to the sale of foodstuffs and the matters of water supply, sanitary conveniences, and nuisances, which will in no wise interfere with this very popular Festival, which attracted over half-a-million persons during the eight days on which it was held.

New legislation in the *Pharmacy and Poisons Act, 1933—Listed Sellers of Part II. Poisons* came into operation on the 1st May. Briefly, the provisions affecting a local authority are :—registration of premises, and the control of storage, transport, labelling and sale of certain specified poisons.

NUISANCES.

The number of nuisances reported upon and dealt with during the year was 21,773, which is an increase of 2,663 upon the previous year.

Analysis reveals, however, that the variation is much in accord with previous years. It is satisfactory to note that less action has had to be taken against the dirty class of tenant, whose actions and lack of action create so much trouble to all.

It is particularly noted, in the complaints received at the Department, the increasing number of tenants of poor type property who desire Council houses.

Notices Served.

The following are the numbers of notices and letters issued during the year :—

Number of notices served :—

Informal.....	4,365	
Statutory	340	
	—	4,705
Number of special letters sent		2,664
Number of circular letters sent		2,128
Total.....		<u>9,497</u>

Magisterial Proceedings.

It was necessary to report 75 cases of statutory “ Notices not complied with ” to the Health Committee, who ordered legal proceedings to be taken, but in only 2 cases were summonses issued. The work in the other instances was carried out before making application for summonses.

The details of this part of the work are given on page 220.

The Rent and Mortgage Interest Restrictions Acts.

No application was received from tenants for a certificate under the above Acts certifying that the house was not reasonably fit for habitation.

Conversion of “ Dry ” Closets to Water-closets.

The conversion of these conveniences to water-closets, under Section 36, Public Health Act, 1875, has proceeded in a satisfactory manner. During the year, 21 pail-closets have been converted,

also 4 "cell" privies, and 13 combined privies and ashpits. In addition, 17 pail-closets were abolished in the demolition of Slum Areas. Ten years ago upwards of 1,800 privies were in existence, whereas to-day only 9 remain within the boundaries of the City as before the recent extension. These remaining closets are generally in good structural condition and, in certain instances, no sewer is available to enable conversion to be effected.

In addition, 25 "waste-water" closets have been abolished and replaced by up-to-date conveniences. These "waste-water" closets consist simply of a trapped stoneware shaft of 12 in. to 18 in. diameter in the w.c., and from 4 ft. to 9 ft. deep. The solids in the trap are flushed away by slop- and rain-water from the yard drains, the shafts (usually caked with excreta) being only cleansable by scraping. Unfortunately, this type of closet, which is never free from effluvia, is deemed to be, under existing law, on the "water-carriage" system. The conversion of these to proper water-closets must of necessity be slow.

Seven dry ashpits were also removed and, in three instances, were replaced by regulation dustbins (the first of which was supplied free of charge). 29 free bins were supplied during the year.

RETURN OF PRIVIES, ETC., IN THE VARIOUS WARDS OF THE CITY.

WARDS.	Total No. Privies.	Pail- Closets.	"Cell" Privies.	Combined Privies and Ashpits.
St. Nicholas' .....	....	....	....	....
St. Thomas'	55	9	....	46
St. John's .....	....	....	....	....
Stephenson .....	....	....	....	....
Armstrong .....	....	....	....	....
Elswick .....	....	....	....	....
Westgate .....	....	....	....	....
Arthur's Hill .....	....	....	....	....
Benwell	4	1	3	....
Fenham	49	5	....	44
All Saints' .....	....	....	....	....
St. Andrew's .....	....	....	....	....
Jesmond .....	....	....	....	....
Dene	19	....	17	2
Heaton .....	....	....	....	....
Byker .....	....	....	....	....
St. Lawrence .....	....	....	....	....
St. Anthony's .....	....	....	....	....
Walker	1	....	....	1
Total in City	128	15	20	93

Smoke Abatement.

Under the provisions of the *Public Health (Smoke Abatement) Act, 1926*, a byelaw was made and came into operation on the 1st June, allowing 3 minutes' emission of black smoke during a period of 30 minutes, anything above this being deemed to be an offence and a nuisance. Whenever this permissible amount is found to be exceeded, and also where a heavy emission of "medium" smoke is observed, the cause is inquired into and advice given, wherever possible, to remedy the fault.

It is pleasing to record increased activity in the number of observations, together with a decreased number of offences, as compared with the previous year.

595 observations were made of 100 factory and other chimneys. In addition there were 104 observations of the chimney at the City Hospital for Infectious Diseases, Walker Gate.

15 informal notices were served during the year. Drivers of 2 steam wagons were verbally cautioned about the quantity of black smoke given off whilst proceeding through the City.

The following table gives details as to smoke inspection :—

No. of chimneys watched.	No. of observations made.	No. of chimneys from which black smoke issued in such quantity as to be a nuisance.	No. of times when smoke issued so as to be a nuisance.	No. of notices served for the abatement of smoke nuisances.		No. of Prosecutions.
				Informal.	Statutory.	
100	595	11	27	15	....	....

NOTE.—Not including 104 observations and 39 excessive emissions at the City Hospital, Walker Gate.

ATMOSPHERIC POLLUTION.—NEWCASTLE RECORDS, 1936.

TOWN MOOR GAUGE.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Lime as Ca.O.
January ..	113.6	0.14	1.85	1.96	0.91	3.63	8.49	1.48	0.64	0.09	0.18
February	79.5	0.11	1.42	2.39	2.07	3.98	9.97	1.80	0.80	0.09	0.20
March	99.4	0.20	1.94	2.30	2.39	3.18	10.01	1.70	0.92	0.10	0.17
April.....	54.4	0.04	1.48	1.86	2.12	2.54	8.04	0.80	0.67	0.06	0.14
May	71.0	0.12	1.89	2.43	1.28	3.83	9.55	1.02	0.50	0.06	0.06
June	99.4	0.13	1.96	1.52	1.39	3.18	8.18	0.75	0.60	0.09	0.33
July.....	78.1	0.10	1.62	1.43	1.87	1.72	6.74	0.75	0.28	0.10	0.07
August	71.0	0.11	1.18	1.35	1.70	1.99	6.33	0.72	0.26	0.07	0.11
Sept.	83.8	0.10	1.14	1.03	2.19	2.17	6.63	1.09	0.48	0.13	0.34
October ..	42.6	0.23	0.87	1.23	1.96	2.30	6.59	0.85	0.94	0.07	0.28
Nov.	102.2	0.03	1.02	1.01	2.46	3.26	7.78	1.41	1.05	0.26	0.34
Dec.	42.6	0.64	1.62	1.93	2.04	1.79	8.02	1.02	0.37	0.23	0.24
Total, 12 months....	937.6	1.95	17.99	20.44	22.38	33.57	96.33	13.39	7.51	1.35	2.46
Average per month	78.1	0.16	1.50	1.70	1.87	2.80	8.03	1.20	0.63	0.11	0.21

An average of 8.03 metric tons per square kilometre per month=7.7 cwts. per acre per annum, or 247 tons per square mile per annum, as compared with 7.1 cwts. per acre, or 229 tons per square mile in 1935.

WESTGATE CEMETERY GAUGE.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Carbonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Lime as Ca.O.
January ..	140.3	0.12	5.22	4.44	3.09	6.73	19.60	3.07	0.90	0.17	0.47
February	60.1	0.19	2.63	3.15	1.44	3.25	10.66	1.15	0.64	0.09	0.29
March	70.8	0.28	3.89	4.22	1.42	3.39	13.20	1.46	0.65	0.08	0.41
April.....	38.7	0.05	2.29	3.30	0.85	1.94	8.43	0.69	0.52	0.04	0.35
May	53.4	0.08	2.38	3.43	1.07	2.46	9.42	0.99	0.41	0.05	0.48
June	76.2	0.17	2.25	2.74	0.91	2.28	8.35	0.73	0.43	0.01	0.37
July.....	63.7	0.08	2.26	2.91	0.96	1.93	8.14	0.65	0.31	0.04	0.07
August	60.1	0.33	1.43	2.02	0.96	1.32	6.06	0.87	0.17	0.01	0.15
Sept.	65.5	0.11	1.43	1.49	1.31	1.96	6.30	0.86	0.47	0.07	0.27
October ..	42.7	0.24	2.02	2.75	1.71	2.31	9.03	0.88	1.03	0.08	0.35
Nov.	80.2	0.08	2.15	2.74	1.92	1.76	8.65	1.10	0.73	0.24	0.48
Dec.	40.1	0.13	2.10	2.38	0.48	2.08	7.17	1.01	0.40	0.08	0.59
Total, 12 months....	791.8	1.86	30.05	35.57	16.12	31.41	115.01	13.46	6.66	0.96	4.28
Average per month	66.0	0.16	2.50	2.96	1.34	2.62	9.58	1.12	0.56	0.08	0.36

An average of 9.58 metric tons per square kilometre per month=9.2 cwts. per acre per annum, or 294 tons per square mile per annum, as compared with 9.2 cwts. per acre, or 295 tons per square mile in 1935.

WELBECK RESERVOIR GAUGE.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Lime as Ca.O.
January ..	69.0	0.04	1.56	2.02	1.38	3.03	8.03	1.28	0.64	0.10	0.17
February	45.6	0.09	1.25	2.92	1.82	3.28	9.36	1.38	1.00	0.09	0.34
March	58.6	0.19	1.41	2.80	1.64	3.05	9.09	1.29	0.90	0.10	0.34
April.....	39.1	0.08	1.39	3.29	1.17	2.34	8.27	0.73	0.78	0.07	0.29
May	50.8	0.14	1.85	3.48	1.31	3.15	9.93	0.98	0.72	0.08	0.34
June	75.5	0.15	1.21	3.57	1.07	2.11	8.11	0.62	0.64	0.04	0.38
July.....	63.8	0.12	1.82	2.35	1.41	1.65	7.35	0.82	0.30	0.03	0.31
August	62.5	0.14	1.41	2.20	0.87	1.38	6.00	0.77	0.17	0.03	0.16
Sept.	63.8	0.21	1.52	2.07	1.02	2.04	6.86	0.74	0.49	0.03	0.16
October ..	23.4	0.21	0.86	2.21	0.79	1.26	5.33	0.62	0.42	0.04	0.27
Nov.	78.1	0.23	1.81	2.79	2.03	3.59	10.45	1.29	1.38	0.20	0.39
Dec.	37.8	0.26	0.99	2.26	1.73	3.55	8.79	1.17	0.61	0.09	0.53
Total, 12 months....	668.0	1.86	17.08	31.96	16.24	30.43	97.57	11.69	8.05	0.90	3.68
Average per month	55.7	0.16	1.42	2.66	1.35	2.54	8.13	0.99	0.67	0.80	0.31

An average of 8.13 metric tons per square kilometre per month=7.8 cwts. per acre per annum, or 250 tons per square mile, per annum, as compared with 6.5 cwts. per acre, or 207 tons per square mile in 1935.

TOTAL IN THREE GAUGES IN THE CITY, 1936.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Lime as Ca.O.
Total, 12 months....	2397.4	5.67	65.12	87.97	54.74	95.41	308.91	38.54	22.22	3.21	10.42
Average per month	199.8	0.47	5.43	7.33	4.56	7.95	25.74	3.21	1.85	0.27	0.87
Average per gauge 12 mths.	799.1	1.89	21.71	29.32	18.25	31.80	102.97	12.85	7.41	1.07	3.47
Average per gauge per month	66.6	0.16	1.81	2.44	1.52	2.65	8.58	1.07	0.62	0.09	0.29

An average of 8.58 metric tons per square kilometre per month=8.3 cwts. per acre per annum, or 264 tons per square mile per annum, as compared with 7.6 cwts. per acre, or 244 tons per square mile in 1935.

For comparison with the foregoing, the following returns of sunshine recorded at the Armstrong College, Newcastle, and at Cockle Park, near Morpeth (about 15 miles from the City), are given :—

Month.	Armstrong College. Sunshine (hours).	Cockle Park. Sunshine (hours).
January	45.4	56.5
February	50.3	65.4
March.....	46.5	51.2
April	154.2	203.5
May	122.4	174.6
June	168.2	209.8
July	137.2	157.3
August	174.1	186.3
September	74.8	85.8
October.....	86.5	105.0
November	48.1	70.0
December	47.2	62.3
Total for year	1154.9	1427.7
Average per month	96.2	119.0

CINEMAS, THEATRES, AND OTHER PLACES OF PUBLIC ENTERTAINMENT.

By a Ministry of Health Circular issued in 1920, Sanitary Authorities are required to give particular attention to premises holding a licence for music, dancing, etc., special regard having to be given to sanitary conveniences, dressing rooms, ventilation, and means of escape in case of fire.

In pursuance of this order, 6 applications were received for certificates of sanitation which must be submitted to the Licensing Justices before a music or dancing licence is granted. After a careful inspection of the premises all were granted.

The number of places so certified is now 4 theatres and music halls, 38 cinemas, and 119 concert halls, billiard rooms, cafés, etc., 173 visits were made both during the day and night time to inspect the sanitary arrangements, dressing rooms, etc., which were generally found to be in order.

Testing (with the “Kata” thermometer) of the air and ventilating system of all theatres, music halls and cinemas has been carried out.

In 14 cinemas, conditions were found to be unsatisfactory. This state was immediately brought to the attention of the responsible persons, who rectified matters. The trouble was due to inattention to the varying climatic conditions (alternating hot and cold spells) and the proper use of efficient appliances.

In all other cases the conditions were satisfactory.

In addition, tests for demonstration purposes were made at the Durham University College of Medicine and at the Rutherford College.

OFFENSIVE TRADES.

14 applications for permission to establish the trade of a fish fryer were received during the year. Of that number 5 were granted and 7 refused, the proposed premises not being suitable for the purpose, whilst 2 applications were withdrawn.

This class of "offensive trade" still predominates, there being now 158 on the register (against 161 last year). As compared with the previous year there is an increase of 1 gut scraper, and a decrease of 3 fish fryers, 1 rag and bone dealer, 1 tripe boiler, and 1 bone boiler.

The fried fish shops are regularly inspected by day and occasionally at night-time. It was necessary to serve notices for the abatement of nuisances in only 3 cases.

With the exception of a few minor contraventions, all the offensive trades have been conducted in a satisfactory manner.

In consequence of receipt of complaints regarding the untidy condition of streets in the vicinity of fried fish shops, due to the deposit thereon of greasy wrapping papers, etc., "Litter" notices were sent to and are displayed in all these shops, directing the attention of the public to the byelaw in respect of litter in streets. A satisfactory improvement followed the issue of these notices in the affected districts.

The number of offensive trades now on the register is :—

Fish fryers	158
Rag and bone dealers.....	8
Tripe boilers	6
Gut scrapers	7
Dealers in hides and skins.....	4
Bone boilers.....	2
Fat melters and extractors.....	1
Glue and size makers.....	2
Soap boiler	1

All are systematically inspected, 1,402 such visits being made during the year.

SUMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES
WERE SERVED DURING 1936.

Foul pail-closets (to replace with water-closets).....	2
Foul privies and ashpits (to replace with water-closets).....	35
Defective waste-water closets (to replace with fresh-water closets with flushing cisterns, etc.).....	39
Foul or defective ashpits not connected with privies (to remove and provide dust-bins).....	7
Insufficient water-closet accommodation (additional water- closets ordered)	6
Defective or insufficient dust-bins (for houses)	1,235
" " " (for business premises)	9
Defective water-closets	1,435
Water-closets without adequate water supply	44
Choked water-closets (mostly served on tenants)	11
Dirty water-closets (all served on tenants)	8
Defective drains (to repair, or construct new drains)	677
Insufficient means of drainage	28
Rainwater fall-spouts connected directly with drains	38
Insufficient ventilation to drains	108
Choked drains, etc.	245
Defective, want of, or choked sinks, waste-pipes, etc.	505
No sink provided	14
Defective or choked soil-pipes, vent shafts, etc.	21
Sink waste-pipes not trapped	375
Want of or defective pavement in yards, passages, etc.	861
Dirty rooms.....	26
Dirty bedding	8
Damp rooms	762
Dirty yards, passages, stairs, etc.	52
Animals, pigeons, and fowls improperly kept	7
Offensive accumulations	48
Accumulations of manure	13
Want of or defective manure pits	9
Broken roofs and want of or defective or choked spouting.....	2,164
Want of water (other than in tenements—see below).....	132
Smoke nuisances.....	11
Want of proper ventilation to rooms (including to floor space), broken window cords, etc.	939
Structural defects—internal and external—(broken plaster, floors, stairs, walls, fireplaces, etc.).....	9,982
Cisterns supplying water to sinks, etc., dirty or defective.....	3
Stables (unsuitable, defective, etc.)	2
Piggeries (" ")	2
Food manufactured or stored for sale under improper conditions...	10
Bakehouses—Dirty, etc.	90
Fried fish shops—(Plaster and pointing defective, and dust-bins required)	3
Schools (Council and other) :—	
Foul privies (2) and ashpit	1
Urinal insufficiently drained	1
Dust-bins required	1
Sink waste-pipe choked and defective	1
Water tap defective	1
Carried forward.....	19,971

SUMMARY OF NUISANCES, ETC.—Continued.

	Brought forward.....	19,971
Cellar dwellings illegally occupied.....		3
Inadequate accommodation for :—		
Storage of food (other than in tenements)		432
Cooking of food (,, ,,)		105
Washing of clothes (,, ,,)		82
Water supply and sink not conveniently accessible (other than in tenements)		139
Rooms, staircases, etc., insufficiently lighted (other than in tenements)		27
Tenements—Limewashing not done		18
No adequate accommodation for washing of clothes....		21
,, ,, storage of food.....		67
,, ,, preparation and cooking of food....		11
Water supply and sinks not adequate, conveniently accessible, etc.....		104
Water supply (only) not adequate, conveniently accessible, etc.....		16
Insufficient number of water-closets provided		5
Inadequate lighting of common staircases—		
Natural .....20 }		79
Artificial ...59 }		
Staircases without proper handrails, etc.		4
Cinemas—(Dust-bins required)		1
Temperature excessive		14
Tents, vans, sheds, and similar structures—(Sanitary arrange- ments unsatisfactory)		1
Ice Cream (Floor of manufactory broken)		1
Premises unregistered		2
Dairy (floor dirty)		1
Shops Act, 1934 ; Sec. 10—(Defects and contraventions).....		84
“ Offensive trade ” established without consent		1
Sites of demolished houses not properly cleared		246
Derelict buildings (unsafe)		4
Unclassified minor nuisances		334
	TOTAL	21,773

DETAILS RELATING TO CERTAIN WORKS CARRIED OUT IN THE ABATEMENT OF
NUISANCES AND TO INSPECTIONS MADE DURING 1936.

Length (in yards) of old drains removed	1,707
Length (in yards) of new drains constructed	2,510
New trapped gullies provided to drains.....	466
Combined Privies and ashpits removed—Privies.....	13
Ashpits	11
" Cell " privies removed	4
Pail-closets removed	38
Defective water-closets removed.....	155
Water-closets provided (in place of the foregoing privies and defective water-closets removed, also in 25 cases where the accommodation was previously insufficient).....	213
" Chemical " closets provided (no sewer being available).....	2
Dry ash-pits removed and replaced by galvanised iron dust-bins	7
Dust-bins substituted for dry ash-pits where water-closets existed, and provided in cases where privies have been replaced by water-closets.....	*29
No. of drains tested	1,087
No. of tests of above drains made by smoke and water.....	1,111
No. of inspections from complaints made at office (verbally or by letter)	5,085
No. of tenement inspections made.....	7,696
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy.....	568
Inspections of houses made from complaints received outdoors or nuisances discovered in the districts, including a large number of minor nuisances, such as choked drains and dirty yards, the abatement of which was accomplished at the time of visit, and without legal notice.....	2,436
Inspections to learn if works ordered were in progress.....	14,384
Supervisions of work in progress.....	8,354
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing	16,551
Inspections after infectious disease.....	1,446
Inspections of milk shops and ice creameries (including retail shops)	1,628
„ bakehouses.....	† 1,537
„ offensive trades	1,402
„ wholesale margarine warehouses	48
„ as to limewashing of tenements.....	1,295
„ schools	181
„ shops (re Shops Act, 1934)	452
„ public houses	74
„ under Housing Acts.....	11,368
„ re overcrowding (Preliminary Survey)	80,660
Inspection of cinemas, etc. (day visits, 124 ; night visits, 49).....	173
„ Tents, vans, sheds and similar structures.	57
Miscellaneous visits	3,082

* Dust bins supplied free by Corporation.

† Including 1,316 inspections made under the Factory and Workshop Acts by the Assistant Inspectors of Workshops.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1936.

NATURE OF COMPLAINT.	No. of Cases.	Work done and Nuisances abated without the Summonses ordered being applied for.	Summonses issued.	
			Work done and Summonses withdrawn.	Other Results.
<i>Public Health Acts :—</i>				
Roofs and/or spouting defective	20	18	2	
Dampness in rooms, etc.	8	8	....
Rooms inadequately ventilated (broken sash-cords, etc.)	4	4	....
Fireplaces, ovens, etc., defective (causing emission of smoke into rooms)	5	5	....
Scullery sink foul, bench rotted, etc.	1	1	....
Sink waste-pipes defective, untrapped, etc.	1	1	....
Scullery floor (flagged) defective and damp	1	1	....
Basement room dilapidated, causing room above to be damp, cold, draughty, dirty, etc.	1	1	....
Drains defective, imperfectly trapped, etc.	5	5	....
Yard pavements defective	8	8	....
<i>Public Health Act, 1875, Sec. 36, and Newcastle upon Tyne Improvement Act, 1892, Sec. 53 :—</i>				
Water-closets defective	14	14	....
<i>Newcastle upon Tyne Corporation Act, 1911, Sec. 55 :—</i>				
Want of or defective dustbins for house refuse	6	6	....
<i>Newcastle upon Tyne Corporation Act, 1926, Sec. 14 :—</i>				
<i>Newcastle upon Tyne Corporation (General Powers) Act, 1935, Sec. 9 :—</i>				
Houses not provided with sufficient and properly ventilated larder or other food storage accommodation	1	1	....
TOTAL	75	73	2	....

HOUSING.

Housing Act, 1935.—Overcrowding.

PRELIMINARY SURVEY.

Section 1 of the above Act imposes on Local Authorities the duty of ascertaining the number of dwelling-houses in their area which are overcrowded.

The survey for this purpose, authorised by the City Council on the report of the Health Committee of 4th December, 1935, has now been completed.

The enumeration of the houses in the City, other than those on the Corporation estates, has been carried out by a temporary staff of 20 men and 2 clerks, who were appointed for this purpose.

The houses on the Corporation estates were dealt with by the City Treasurer's staff.

The overcrowding provisions of the Act are set out in two tables. Table I. states the maximum number of persons permitted to occupy a house in accordance with the number of rooms. Table II. states the maximum number in accordance with the floor areas of the rooms. Further, it is not permissible for persons of opposite sexes who are over 10 years of age, and not living together as husband and wife, to sleep in the same bedroom.

A circular (No. 1,507) issued by the Minister of Health on the 19th November, 1935, directs that :—

- (a) The inspection of the houses be completed by the 1st April, 1936.
- (b) The report of the inspections, showing the result of the inspections and the number of new houses required to abate the overcrowding be submitted by 1st June, 1936.
- (c) The proposals for the provision of the new houses required be submitted by 1st August, 1936.

In certain other towns the survey has been confined to houses of the working classes, but in view of the special local conditions prevailing in Newcastle where the development of tenemented dwellings in residential areas has been carried out on a large scale, and also in view of the marked degree of overcrowding which was revealed by the 1931 census, it was thought advisable to make the scope of the survey as wide as possible.

HOUSING ACT, 1935.—OVERCROWDING SURVEY.

TABLE 1.

SEPARATE DWELLING-HOUSES.

MUNICIPAL WARDS.	Total Nos. Recorded.		Empty.		Not Overcrowded.		Overcrowded.		Percentage of Overcrowding.		
	Private.	Council.	Private.	Council.	Private.	Council.	Private.	Council.	Private.	Council.	Total.
All Saints'	3,053	44	48	....	2,191	32	814	12	26.66	27.3	26.06
Armstrong	3,560	....	99	....	2,939	....	522	....	14.66	....	14.66
Arthur's Hill	2,463	....	24	....	2,407	....	32	....	1.29	....	1.29
Benwell.....	4,768	1,620	76	....	4,232	1,509	460	111	9.64	6.8	8.94
Byker	3,636	....	28	....	2,972	....	636	....	17.49	....	17.49
Dene	5,480	919	239	....	5,182	907	59	12	1.07	1.3	1.1
Elswick	4,185	....	168	....	3,642	....	375	....	8.96	....	8.96
Fenham	6,523	2,567	193	....	6,129	2,450	201	117	3.08	4.6	3.5
Heaton	3,874	....	73	....	3,658	....	143	....	3.69	....	3.69
Jesmond	3,707	....	206	....	3,494	....	7	....	0.18	....	0.18
St. Andrew's.....	2,413	....	49	....	1,948	....	416	....	17.23	....	17.23
St. Anthony's	3,703	2,395	41	....	3,011	2,181	651	214	17.58	8.9	14.18
St. John's	2,530	....	44	....	1,853	....	633	....	25.01	....	25.01
St. Lawrence	3,651	436	18	....	3,005	363	628	73	17.2	16.7	17.15
St. Nicholas'	300	....	6	....	257	....	37	....	12.33	....	12.33
St. Thomas'	4,096	104	181	....	3,709	92	206	12	5.02	11.5	5.19
Stephenson	4,327	....	184	....	3,310	....	833	....	19.25	....	19.25
Walker	5,345	2,431	105	10	4,599	2,179	641	242	11.99	9.96	11.35
Westgate	3,484	....	43	....	2,976	....	465	....	13.34	....	13.34
TOTALS.....	71,098	10,516	1,825	10	61,514	9,713	7,759	793	10.91	7.54	10.48
81,614			1,835		71,227		8,552		79,779		

HOUSING ACT, 1935.—OVERCROWDING SURVEY.

TABLE 2.

Number of Persons in Family.	Number of Families containing the Number of Persons in the First Column occupying Dwellings with the Permitted Number shown at the Head of this Column.																																		FAMILIES.		Total Families.						
	1	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	13	14½	16	17½	19	20½	22	24	26	29	30½	32	35		36½	(a) Overcrowded	(b) Uncrowded.			
1	13	3538	126	1759	40	991	51	666	10	218	1	...	81	1	54	17	17	9	1	(a) 130 (b) 7,593	7,593			
1½	..	2	37	67	15	...	44	...	16	16	2	1	4	1	1	(a) 206 (b) 18,918	206		
2	93	37	911	4144	694	...	5281	2	497	1	3972	195	3	4	1975	48	2	588	327	165	70	21	9	5	2	1	1	(a) 495 (b) 5,820	19,048		
2½	...	418	77	49	1550	1	1940	8	408	1065	198	2	1	452	20	86	26	7	5	1	1	(a) 541 (b) 15,549	6,315		
3	371	81	89	2119	6	3997	25	1091	1	3646	784	5	5	2010	161	719	1	482	257	134	59	21	21	2	2	1	(a) 1,102 (b) 3,370	16,090			
3½	..	109	10	814	169	57	940	21	515	3	738	407	1	9	407	49	111	68	25	12	6	1	(a) 1,481 (b) 8,738	4,472			
4	...	113	11	1097	243	17	62	138	1822	3	2454	1054	7	11	1497	216	1	603	1	363	230	121	74	26	37	8	5	2	2	...	1	(a) 592 (b) 2,072	10,219			
4½	...	40	2	447	51	13	39	37	526	4	524	444	7	251	64	1	86	65	1	31	17	12	1	1	(a) 832 (b) 4,755	2,664			
5	..	20	4	585	59	7	53	104	758	13	1240	818	7	16	756	191	343	1	232	1	155	93	54	29	28	4	10	1	2	1	1	1	(a) 737 (b) 1,109	5,587		
5½	20	271	22	1	301	17	105	3	336	398	5	15	138	54	63	45	26	9	13	3	1	(a) 862 (b) 1,626	1,846		
6	...	14	1	254	13	1	388	14	128	49	126	438	47	83	291	96	3	191	2	116	1	83	53	38	12	31	5	6	1	2	1	(a) 441 (b) 455	2,488			
6½	..	2	..	131	8	1	165	1	38	22	73	201	12	26	74	32	46	3	30	12	5	7	1	2	2	1	1	(a) 562 (b) 528	896		
7	...	3	...	86	1	1	141	2	33	15	52	228	14	48	130	67	5	82	1	2	60	45	27	16	7	9	2	4	4	3	1	1	(a) 245 (b) 152	1,090		
7½	34	1	1	58	3	20	10	21	91	6	20	38	35	6	26	1	1	14	5	3	1	1	1	(a) 279 (b) 174	397	
8	26	3	59	12	16	68	82	5	8	7	36	9	36	5	29	22	9	5	6	6	1	1	1	1	(a) 102 (b) 48	453	
8½	13	20	3	8	29	26	1	2	16	3	9	8	6	1	5	(a) 76 (b) 68	150	
9	2	3	..	17	...	3	4	21	16	1	4	5	8	25	1	8	2	12	5	2	2	1	1	1	(a) 33 (b) 14	144	
9½	4	1	8	7	2	2	9	2	1	1	4	1	3	1	1	(a) 279 (b) 174	47	
10	1	3	6	3	1	7	2	1	3	2	5	1	2	2	1	3	1	(a) 23 (b) 21	44	
10½	1	2	1	1	2	2	(a) 7 (b) 2	9
11	2	1	2	1	1	1	1	1	2	1	(a) 7 (b) 4	11	
11½	1	(a) 1 (b) 5	1
12	1	1	1	1	3	1	1	(a) 4 (b) 5	9	
																																								(a) 8,552 (b) 7,593	7,593		

TABLE 3.

(HOUSES OTHER THAN THOSE ON CORPORATION ESTATES.)

Number of Persons in Family.	Number of Families containing the Number of Persons in the First Column occupying Dwellings with the Permitted Number shown at the Head of this Column.																																FAMILIES.		Total Families					
	1	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	13	14½	16	17½	19	20½	22	24	26	29	30½		32	35	36½	(a) Overcrowded.	(b) Uncrowded.
1	13	3458	126	1689	40	991	4	666	218	81	1	54	17	17	9	1	(a)	(b) 7,385	7,385
1½	2	37	67	15	44	16	1	4	1	1	(a)	(b) 188	188
2	93	36	883	4138	291	5281	2	47	1	3972	3	3	4	1975	2	588	327	165	70	21	9	5	2	1	1	(a) 129	(b) 17,791	17,920
2½	418	76	49	1445	1	1940	8	25	1065	1	2	1	452	86	26	7	5	1	1	(a) 494	(b) 5,115	5,609
3	371	78	89	1972	6	3997	25	150	1	3646	3	5	5	2010	716	1	482	257	134	59	21	21	2	2	1	(a) 538	(b) 13,516	14,054
3½	109	10	814	114	57	940	21	113	3	738	3	1	9	407	1	109	68	25	12	6	1	(a) 1,047	(b) 2,514	3,561
4	113	11	1097	190	17	62	138	1405	3	2454	10	7	11	1497	1	1	595	1	363	230	121	74	26	37	8	5	2	2	1	(a) 1,428	(b) 7,054	8,482
4½	40	2	447	32	13	37	37	360	4	524	7	7	251	1	1	85	65	1	31	17	12	1	1	(a) 571	(b) 1,405	1,976
5	20	4	585	40	7	45	104	617	13	1240	20	7	16	756	1	337	1	232	1	155	93	54	29	28	4	10	1	2	1	1	1	(a) 805	(b) 3,620	4,425
5½	20	271	9	1	301	17	36	3	336	8	5	15	138	61	45	26	9	13	3	1	(a) 655	(b) 663	1,318
6	14	1	254	8	1	388	14	73	49	126	75	47	83	291	5	3	187	2	116	1	83	53	38	12	31	5	6	1	2	1	(a) 802	(b) 1,168	1,970
6½	2	131	4	1	165	1	11	22	66	24	12	26	74	2	45	3	30	12	5	7	1	2	2	1	1	(a) 403	(b) 247	650
7	3	86	1	141	2	15	15	52	44	14	37	130	2	5	76	1	2	60	45	27	16	7	9	2	4	4	3	1	1	(a) 359	(b) 446	805
7½	34	1	1	58	3	7	10	21	4	6	20	38	2	6	24	1	1	14	5	3	1	1	1	(a) 145	(b) 117	262
8	26	1	59	8	16	68	5	5	8	7	6	9	33	5	29	22	9	5	6	6	1	1	1	1	(a) 196	(b) 141	337
8½	13	20	2	8	29	3	1	2	6	3	8	8	6	1	5	(a) 78	(b) 37	115
9	2	3	17	4	21	1	4	2	2	24	1	8	2	12	5	2	2	1	1	1	(a) 54	(b) 61	115
9½	4	1	8	1	2	2	3	2	1	1	4	1	3	1	1	(a) 21	(b) 14	35
10	1	3	6	1	4	2	1	3	2	5	1	2	2	1	3	1	(a) 17	(b) 21	38
10½	1	2	1	2	2	(a) 6	(b) 2	8
11	2	....	....	1	2	....	....	1	1	....	....	....	....	....	1	....	....	2	....	1	....	....	....	....	....	....	(a) 7	(b) 4	11	
11½	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	(a) 1	(b) ..	1	
12	1	1	1	3	1	1	(a) 3	(b) 5	8

TABLE 4.

(CORPORATION ESTATES ONLY.)

Number of Persons in Family.	Number of Families containing the Number of Persons in the First Column occupying Dwellings with the Permitted Number shown at the Head of this Column.																							FAMILIES.		Total Families.
	1	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	(a) Overcrowded.	(b) Uncrowded.	
1	80	....	70	....	....	....	....	47	....	....	10	....	....	....	1	....	....	....	....	....	....	....	(a) (b) 208	208	
1½	16	....	....	2	....	....	....	....	....	....	....	....	....	....	....	(a) (b) 18	18	
2	1	28	6	403	....	....	....	450	....	....	192	....	....	....	48	....	....	....	....	....	....	....	(a) 1 (b) 1,127	1,128	
2½	1	....	105	....	....	....	383	....	....	197	....	....	....	20	....	....	....	....	....	....	....	(a) 1 (b) 705	706	
3	3	....	147	....	....	....	941	....	....	781	....	....	....	161	....	3	....	....	....	....	....	(a) 3 (b) 2,033	2,036	
3½	55	....	....	....	402	....	....	404	....	....	....	48	....	2	....	....	....	....	....	(a) 55 (b) 856	911	
4	53	....	....	....	417	....	....	1044	....	....	....	215	....	8	....	....	....	....	....	(a) 53 (b) 1,684	1,737	
4½	19	....	2	....	166	....	....	437	....	....	....	63	....	1	....	....	....	....	....	(a) 21 (b) 667	688	
5	19	....	8	....	141	....	....	798	....	....	....	190	....	6	....	....	....	....	....	(a) 27 (b) 1,135	1,162	
5½	13	....	....	....	69	....	....	390	....	....	....	54	....	2	....	....	....	....	....	(a) 82 (b) 446	528	
6	5	....	....	....	55	....	....	363	....	....	....	91	....	4	....	....	....	....	....	(a) 60 (b) 458	518	
6½	4	....	....	....	27	....	7	177	....	....	....	30	....	1	....	....	....	....	....	(a) 38 (b) 208	246	
7	1	....	....	....	18	....	....	184	....	11	....	65	....	6	....	....	....	....	....	(a) 203 (b) 82	285	
7½	13	....	....	87	....	....	....	33	....	2	....	....	....	....	....	(a) 100 (b) 35	135	
8	2	....	....	....	4	....	....	77	....	....	....	30	....	3	....	....	....	....	....	(a) 83 (b) 33	116	
8½	1	....	....	23	....	....	....	10	....	1	....	....	....	....	....	(a) 24 (b) 11	35	
9	3	....	....	16	....	....	....	3	6	1	....	....	....	....	....	(a) 22 (b) 7	29	
9½	6	....	....	....	....	6	....	....	....	....	....	....	(a) 12 (b)	12	
10	3	....	....	....	....	3	....	....	....	....	....	....	(a) 6 (b)	6	
10½	1	....	....	....	....	....	....	(a) 1 (b)	1	
11	(a) (b) ....	....
11½	(a) (b) ....	....
12	1	....	....	....	....	....	....	(a) 1 (b)	1	

10,516 houses on the Corporation estates and 71,098 ascertained other dwelling-houses have been recorded, making a grand total of 81,614 **separate dwelling-houses**.

The following table summarises the conditions found in :—

		(A) Council houses.		(B) Other dwelling-houses.	
		A.		B.	
Overcrowded	...	7.54	per cent.	10.91	per cent.
Not overcrowded	...	92.37	„	86.52	„
Empty	...	0.09	„	2.57	„

The overcrowding throughout the City, *i.e.*, the houses on the Corporation estates and other ascertained dwelling-houses is 10.48 per cent.

The actual percentage of overcrowding existing in the Wards of the City of all dwelling-houses is set out in Table 1.

The survey of the 81,614 **separate dwelling-houses** has necessitated 88,113 visits by the enumerators and the measurement of 32,624 rooms.

The City Treasurer's staff has made 13,058 visits and measured 7,560 rooms of the foregoing totals.

It is of interest to note that in 211 dwelling-houses overcrowding exists solely on account of the necessity for sex separation, and that within the next two years 584 dwelling-houses may possibly become overcrowded due to the growth of families in age and numbers.

The work of the survey has been carried out very efficiently by the temporary staff and, throughout the whole of the survey, it has not been necessary in any instance to have recourse to legal action to obtain information or entry to houses.

Details of the survey are set out in Tables 1, 2, 3, 4 (pages 222-222c).

The Minister of Health has fixed the 1st January, 1937, as the "appointed day" with respect to overcrowding and, in consequence, the 1st July, 1937, is the date on and after which overcrowding offences will commence.

Provisions are embodied in the Act safeguarding certain specified cases of overcrowding.

Generally, the offences which may commence on the 1st July, 1937, are in the cases of empty houses being let to families whose numbers are in excess of the permitted number to occupy the house.

It is the duty of the local authority, on request from the owner or occupier, to provide the "permitted number" in relation to a house, and all "permitted numbers" must be inserted in the rent books or similar documents by the owners on or before the 1st July, 1937.

To obtain the "permitted numbers" it is necessary to measure the rooms of the house and, for this purpose, a temporary staff has again been appointed, and commenced their task in January, 1937.

The City Treasurer has already commenced to abate overcrowding in Council houses. During the year, 299 families, affecting 1,581 persons, have been re-housed in suitable dwellings.

The Housing Acts, 1925 to 1935.

The number of inspections under the Housing Acts was 11,368, an increase of 866 over last year's total.

MINISTRY OF HEALTH TABLE.

1.—*Inspection of Dwelling Houses during the Year :—*

(1) (a) Total number of dwelling houses inspected for housing defects (under Public Health or Housing Acts).....	7,621
(b) Number of inspections made for the purpose.....	21,300
(2) (a) Number of dwelling houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	3,758
(b) Number of inspections made for the purpose.....	11,368
(3) Number of dwelling houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	*1,202
(4) Number of dwelling houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	4,084

* (*Dealt with as Clearance Areas or as Individual Unfit Houses*).

2.—*Remedy of Defects during the year without Service of formal Notices :—*

Number of defective dwelling houses rendered fit in consequence of informal action by the Local Authority or their officers	1,417
---	-------

3.—*Action under Statutory Powers during the Year :—*

(a).—Proceedings under Sections 17, 18 and 23, of the Housing Act, 1930—

(1) Number of dwelling houses in respect of which notices were served requiring repairs	524
(2) Number of dwelling houses which were rendered fit after service of formal notices :—	
(a) By owners	503
(b) By Local Authority in default of owners.....	....

(b).—Proceedings under Public Health Acts :—

(1) Number of dwelling houses in respect of which notices were served requiring defects to be remedied	2,143
(2) Number of dwelling houses in which defects were remedied after service of formal notices :—	
(a) By owners	2,128
(b) By Local Authority in default of owners.....	....

(c).—Proceedings under Sections 19 and 21 of the Housing Act, 1930 :—

(1) Number of dwelling houses in respect of which Demolition Orders were made	19
(2) Number of dwelling houses demolished in pursuance of Demolition Orders.....	† 20

† (16 of these dealt with in previous years.)

(d).—Proceedings under Section 20 of the Housing Act, 1930 :—

(1) Number of separate tenements or underground rooms in respect of which Closing Orders were made	31
(2) Number of separate tenements or underground rooms in respect of which Closing Orders were determined, the tenement or room having been rendered fit .....	....

MINISTRY OF HEALTH TABLE--*Cont nued.*4.—*Housing Act, 1935—Overcrowding :—*

(a).—(i) Number of dwellings overcrowded at the end of the year	8,552
(ii) Number of families dwelling therein	8,552
(iii) Number of persons dwelling therein	‡26,914
(b).—Number of new cases of overcrowding reported during the year .....	....
(c). (i) Number of cases of overcrowding relieved during the year	299
(ii) Number of persons concerned in such cases	1,581
(d). Particulars of any cases in which dwelling-houses have again become overcrowded after the Local Authority have taken steps for the abatement of overcrowding .....	....
(e). Any other particulars with respect to overcrowding conditions upon which the Medical Officer of Health may consider it desirable to report .....	....

‡ This number is calculated in accordance with the Ministry of Health's formula. The number of persons, irrespective of ages, is 46,563.

Housing Act, 1930 ; Section 17.

The systematic visits under this Section have been increased by 343 in comparison with last year. 1,941 houses (self-contained and flat type) have been inspected within the 10 sanitary districts. Considerable difficulty has been experienced at times with a certain type of owner regarding the requirements of notices. However, obstacles were overcome without recourse to report for statutory action.

Under this valuable Section, owners are required by notice to carry out works or repairs, making houses reasonably fit for habitation.

The nature and number of the defects so dealt with are shown in the following summary :—

HOUSING ACT, 1930 ; SECTION 17.**DETAILS OF WORKS CARRIED OUT UNDER NOTICE.**

No. of houses involved	1,941
Roofs repaired (including chimney stacks).....	1,107
Spouting repaired, renewed, etc.	793
External walls repaired, re-pointed, etc.	1,336
Under-floor ventilation provided.....	238
Yard pavements repaired or renewed	822
Dampness remedied (from causes other than those defined above)	870
Drains repaired, reconstructed, etc.	651
Water-closets repaired	1,237
„ ; additional conveniences provided.....	39
Dustbins provided	349
Accommodation for washing clothes, provided, repaired, etc.	423
Coalhouses repaired	541
Ceiling- and wall-plaster repaired or renewed.....	1,724
Floors repaired or renewed.....	586
Window sash-cords renewed or repaired.....	664
Windows repaired or renewed	469
Doors repaired or renewed.....	947
Cooking accommodation provided.....	76
Fireplaces repaired or renewed.....	815
Ventilated food stores provided.....	548
Water supply and/or sinks provided, waste-pipes repaired, etc.....	1,088
Staircases.—Stairs, handrails, etc., repaired or renewed	516
Light (natural and/or artificial) provided.....	126
Ventilation of rooms, etc., improved.....	84
Rooms, staircases, etc., cleansed	49
Minor repairs (not included in the above)	1,237
TOTAL.....	17,335

Housing Act, 1930 ; Sections 19 and 20.
Individual Unfit Houses.

These sections give a local authority power to order the demolition (Sec. 19) or closure as dwellings (Sec. 20) of insanitary houses. The owner has the right to appear before the Health Committee and, if aggrieved by their decision after hearing his case, may appeal to the County Court.

Houses are reported monthly. The numbers dealt with and the results are given in the following table :—

	Number of		Popula- tion.
	Houses.	Separate Holdings (or Families).	
Demolition Orders made	19	47	147
Closing Orders made	17	31	87
Premises retained for business purposes (owners finding alternative accommo- dation for tenants displaced)	5	10	20
Otherwise dealt with	10	19	51
(negotiations pending, undertakings to repair, not to occupy as dwellings, etc.)			
TOTALS.....	51	107	305

Housing Act, 1935 ; Sections 55 and 56.

Section 55 affords the owner of a working class dwelling the opportunity of submitting to the local authority proposals for the improvement of the house (other than decoration or repair).

When the proposals are agreed and the works completed, a certificate is issued to the owner, covering a period of from five to ten years, exempting the house from any action under “ slum clearance,” as an unfit house.

Under Section 56, any proposals submitted under Section 55 in regard to a house scheduled in a “ slum ” area may be transmitted to the Minister of Health for his consideration. No proposals may be made in respect of houses confirmed as “ unfit ” houses by the Minister.

No application was received under these Sections.

Clearance Areas.

In February and September the Minister of Health held Inquiries into 14 areas. The February Inquiry, in respect of 10 clearance areas and 1 compulsory purchase order, concerned 136 houses, 295 separate dwellings, and a population of 967 persons. The September Inquiry comprised 1 clearance order and 2 compulsory purchase orders, of 415 houses, 857 separate dwellings, and a population of 3,000 persons.

13 areas were fully confirmed by the Minister and 1 with slight modifications.

The first Inquiry only lasted 1 day, the second 6 days. Both were largely attended by the owners and others acting for them, the opposition to the action of the Corporation being particularly strong with respect to the second Inquiry; no objection was offered in regard to 2 areas.

Details of the confirmations are appended in the following tables :—

AREA.	(a) (As originally represented).			(b) (As confirmed by the Minister of Health).		
	Houses.	Dwell- ings.	Popu- lation.	Houses.	Dwell- ings.	Popu- lation.
Miller's Hill	12	63	215	12	63	215
Long Row	31	50	134	31	50	134
Vine Lane	9	27	78	9	27	78
Fawdon Square (Compulsory Purchase Order)	25	25	100	25	25	100
Denton Square	15	15	57	15	15	57
Mary's Place	5	18	70	5	18	70
White Street, No. 1	11	29	78	11	29	78
" " No. 2	13	43	166	13	43	166
Fawdon Old Pit Cottages	5	6	20	5	6	20
Blythe Nook	2	11	21	2	11	21
Bridge Row	8	8	28	8	8	28
Barker Street	8	24	64	8	24	64
Wesley Street (Compulsory Purchase Order)	266	529	1,799	260	518	1,762
Bentinck (Compulsory Purchase Order)	141	304	1,137	141	304	1,137
TOTAL	551	1,152	3,967	545	1,141	3,930

EXCLUSIONS.

	Houses.	Dwellings.	Population.
1 <i>Compulsory Purchase Order</i> . Properties excluded from Order and Area, and to be dealt with under a new order	6	11	37

The houses in all the areas were very old, damp, dilapidated, congested, and beyond repair or reconstruction.

Amongst the outstanding defects may be mentioned :—

Structures.—Defective brick- or stone-work, cracked and bulging walls, damp-proof courses either defective or non-existent, chimney stacks burst and in many cases in danger of falling.

Roofs.—Slates and tiles broken, loose and missing ; timbers sagging and broken, flashings and spouts defective.

Floors.—Broken, rotted, worn and out of level.

Staircases.—Treads broken, worn, out of level, handrails loose, broken and missing, dark, badly ventilated, and difficult of access.

Windows.—Rotting and perished frames and sashes, broken sash-cords, etc.

Doors.—Dilapidated, badly fitting, warped.

Grates and Stoves.—Badly set, defective, fire-bars missing, ovens out of order.

Sanitary accommodation.—W.C.'s used in common by several tenants in bad structural condition.

Water supplies and Sinks.—Insufficient and not conveniently accessible to all the tenants.

Overcrowding.—Both in the houses and on space, prevalent in every area.

Houses Demolished, etc.—Apart from action by the Health Committee, 14 self-contained houses, 4 flats and 1 tenemented house (of 2 holdings) have been demolished, or have ceased to be used as dwellings, for various reasons (conversion to business premises, estate development, dilapidations, etc.)

Houses built during the year 1936.—The City Engineer reports that there were 1,056 self-contained houses, and 569 flats (tenancies), built privately during the year under report. In addition, 643 dwellings were provided under housing schemes.

Tents, Vans, Sheds and Similar Structures.

There now remain only 2 vans in the City occupied as dwellings. These are on isolated plots of land, are in a clean state, and comply with the bye-laws.

Tenemented Houses.

The demolition of houses in slum areas has again reduced the number of tenemented houses. The conversion of large self-contained houses into the maximal number of separate dwellings, which was a feature of the preceding few years, has noticeably decreased.

The plans submitted with respect to these houses now show generally a desirable dwelling.

The number of tenemented houses in the City at the end of the year was 2,796, consisting of :—

1,708	....	One-room holdings.
4,720	....	Two-room holdings.
857	....	Three-room holdings.
103	....	Four-room holdings.
2	....	Five-room holdings.

A total of 7,390 separate holdings. During the year 7,696 inspections have been made of this type of dwelling.

Tenement Bye-laws.

In addition to the Clearance Areas already reported upon, 54 tenemented houses, comprising 247 separate holdings, have been inspected and reported upon in detail during the year, with a view to the bye-laws being put in force. In no case was it found necessary to report for legal proceedings.

New Buildings and Sanitary Alterations.

431 plans were examined by the Medical Officer of Health before their submission to the Town Improvement and Streets Committee and, where necessary, suggestions forwarded to the City Engineer for his consideration, as compared with 397 during the previous year.

Common Lodging Houses.

At the end of the year there were on the Register 17 common lodging houses, as compared with 18 in 1935, one house having been closed and removed from the register, owing to lack of lodgers, etc.

The total number of lodgers for which the houses are registered is 595, showing a decrease of 19 from last year, due to the removal above-mentioned. 2,201 inspections during the day-time and 140 at night-time have been made, and it is satisfactory to note that it was unnecessary to resort to legal proceedings to remedy contraventions of the bye-laws governing the management of the houses.

The average number of lodgers per night was 387, the highest number being 403, and the lowest 353.

The following summary shows in detail the accommodation as at the end of the year :—

Description of Lodgers.	No. of			Accommodation.			
	Houses.	Single Beds.	Double Beds.	Married Couples.	Single Women.	Single Men.	Total.
Married couples and single women	2	60	10	10	60	....	80
Women only	1	18	....	....	18	....	18
Men only	14	497	....	....	....	497	497
TOTAL	17	575	10	10 (20 persons)	78	497	595

Summary of inspections, contraventions found, etc. :—

Number of houses on the register at the end of the year.....	17
Applications for registration (Newcastle Corporation Act, 1911, Sec. 63) ; 18 granted, 1 refused	19
Houses ceased to be occupied as common lodging houses.....	1
Inspections made in the day-time	2,201
Inspections made in the night-time.....	140
Notices served { <i>re</i> washing of bed-clothes, 70, { <i>re</i> lime-washing of houses, 35}	105
Defects and Contraventions of Bye-laws, etc. :—	
Structural defects in houses.....	7
Defective water-closets.....	8
Defective roofs and defective or choked spouting.....	16
Choked w.c.s and drains	12
Sink waste-pipes obstructed	1
Dust-bins defective or insufficient.....	2
Lack of efficient ventilation (broken sash-cords, etc.).....	1
Lavatory wash-basin defective	1
Yard pavement defective.....	1
Unclassified minor nuisances (burst water-pipes, etc.).....	6
Beds not "aired"	1
Slops not emptied	1
Floors not swept.....	1
Lodger occupying an unregistered room	1
Deaths reported.....	2
Cases of infectious disease reported (measles 1, tuberculosis 3).....	4

Factories and Workshops.

The inspection of these has been maintained during the year, the total number of inspections being 9,655, as against 9,056 for the previous year. These included visits to workshops, domestic workshops, workplaces, laundries and bakehouses, also to factories

on receipt of complaint from H.M. Inspector. Generally speaking, their condition as regards sanitary accommodation, ventilation, cleanliness, water supply, and other matters of a hygienic nature, was found satisfactory.

During the year 31 lists of outworkers were received, 8 employers having sent in their lists in February and August, as required by the Factory and Workshop Act, 1901, and 15 employers only once. Included in the lists were the names and addresses of three outworkers residing in other towns, and these, in accordance with the requirements of the Act, were forwarded to the Local Authorities of the districts concerned. No contravention of the Act was found in any of the 74 outworkers' premises inspected.

39 notices as to insanitary conditions in factories and workshops were received from H.M. Inspector of Factories, 30 of which related to factories (which are visited by the Health Department staff only on receipt of a complaint from H.M. Inspector), and 9 to workshops. Some of the latter had, however, been found and dealt with by the District Inspectors prior to receipt of the complaint. The others received due attention and the necessary works were carried out without having to resort to legal proceedings.

ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901, IN
CONNECTION WITH FACTORIES, WORKSHOPS AND WORKPLACES,
DURING THE YEAR 1936.

Home Office Tables.

1.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.
INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS.

PREMISES. (1)	NUMBER OF		
	Inspection. (2)	Written Notices. (3)	Occupiers Prosecuted (4)
Factories	394	214	....
(Including Factory Laundries.)	7,618		
Workshops	1,643		
(Including Workshop Laundries.)			
Workplaces.....			
(Other than Outworkers' premises.)			
TOTAL	9,655	214	....

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS AND
WORKPLACES.

PARTICULARS.	NUMBER OF DEFECTS.			Number of Offences in respect to which Prosecu- tions were institu- ted. (5)
	Found.	Re- medied.	Referred to H.M. In- spector.	
(1)	(2)	(3)	(4)	
<i>*Nuisances under the Public Health Acts :—</i>				
Want of cleanliness	194	194	....	....
Want of ventilation.....	8	8	....	....
Overcrowding .....	....	....	....	....
Want of drainage of floors	1	1	....	....
Other nuisances	76	76	....	....
Sanitary { insufficient	47	44	....	....
accommo- { unsuitable or defective	116	115	....	....
dation { not separate for sexes	12	12	....	....
<i>Offences under the Factory and Workshop Acts :—</i>				
Illegal occupation of underground bakehouse (s. 101)	1	1	....	....
Other offences .....	....	....	11	....
(Excluding offences relating to out-work and offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Work- shops Transfer of Powers Order, 1921.)				
TOTAL	455	451	11	....

* Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.

NATURE OF WORK. (1)	Instances. (2)	Notices served. (3)	Prosecu- tions. (4)
As per Home Office List	None.	None.	None.

TRADES.

Particulars as to the number and nature of the various trades carried on in the workshops of the City :—

TRADES.	Work-shops.	Domestic Work-shops.	Work-places.
Athletic Outfitters, etc.	12	....	....
Bacon Curing, Pickles, etc.	50	1	....
Bags, Waterproofs, etc. (making and repairing)	19	2	3
*Bakehouses.....	268	....	....
Blacksmiths, Plumbers, etc.	123	....	4
Bouquets and Wreaths (making, etc.)	14	....	....
Boots, etc. (making and repairing).....	137	20	....
Dressmaking, Underclothing, etc.	253	15	....
Drysalts, Cleaning & Packing Fruit, Tea, etc.	29	1	94
Furniture Making, Joiners, etc.	226	11	....
Harness, etc. (making and repairing).....	20	....	....
Jewellery, Watches, etc. (making & repairing)	79	2	....
Laundries.....	10	....	....
Machines and Tools (making and repairing)....	149	....	5
Painters, Engravers, Photographers, etc.	82	6	15
Restaurant Kitchens, etc.....	....	....	111
Tailoring, Shirts, etc.....	243	13	....
Miscellaneous	112	....	117
TOTALS	1,826	71	349

* Includes 45 " Factory " and 66 " Domestic " Bakehouses.

Inspection of Council and other Schools.

During the year 181 inspections were made. In three cases defects were found. These were brought to the attention of the Education Authorities and subsequently remedied.

At one school (acquired under the Northumberland Review Order, 1935), privies and ashpits have been replaced by " chemical " closets. Water-closets could not be provided owing to the absence of sewers.

Rag Flock Acts, 1911 and 1928.

There are no manufacturers of rag flock in the City, the principal users being upholsterers and bedding makers. The number of these who use (or are likely to use) rag flock is 26, in 15 workshops and 11 factories. To the former (which are also inspected under the Factory and Workshop Acts) 74 visits were made, factory premises being only visited on receipt of complaint from H.M. Inspector.

Eight samples of rag flock were purchased and submitted for analysis. All were found to conform to the standard of cleanliness prescribed by the Regulations.

Eight samples of feathers (used in the manufacture of bedding and cushions) were purchased and submitted for analysis under the "rag flock" test. Of these, only one conformed to the prescribed standard of cleanliness. No legal action could be taken, as the law relates only to rag flock. There is definitely a need for the amendment of the law in this respect, fixing a standard of cleanliness or purity and the materials to be used in this class of work.

Exhumations.

Two exhumations were carried out under the supervision of the Department during the year, both being authorised by Home Office Licence. The operations were carried out in the early morning in a sanitary and reverent manner and with due regard to the conditions set out in the Licence.

Fertilisers and Feeding Stuffs Act, 1926.

In pursuance of this Act, 24 visits were made to factories, warehouses, and retail shops where fertilisers or feeding stuffs were prepared or stored for sale, for the purpose of seeing that the requirements were carried out as to the marking of packages, inspection of registers, etc.

Six samples of fertilisers and 1 of feeding stuff were obtained (mostly informally) and submitted for analysis to the Agricultural Analyst. In the case of one sample of fertiliser the amount of nitrogen was found to be below that stated on the sample. This was the subject of correspondence with the Ministry of Agriculture and Fisheries, who advised that the article did not come within the scope of the Act, and no further action was taken. The remaining samples all complied with the requirements.

Merchandise Marks Act, 1926.

In the administration of this Act, 335 inspections and personal visits were made to shopkeepers, stall-holders, hawkers, etc., in order to ascertain whether imported goods were properly marked with the "indication of origin" required by the Act and the Orders made thereunder. Attention was drawn to the requirements where necessary, in 93 instances there was left a copy of a printed notice to traders (setting out the principal provisions of the Act), and in 65 cases cautions were administered (55 verbally and 10 by special letter).

Agricultural Produce (Grading and Marking) Act, 1928.

143 inspections of markets, shops and stores, were made as to the grading and marking of eggs. No contravention of the Regulations was found.

Pharmacy and Poisons Act, 1933.

LISTED SELLERS OF PART II. POISONS.

102 applications were received for registration as listed sellers. The applicants consisted of :—

Grocery, Provisions and General Stores	....	50
Hairdressers	....	16
Druggists	....	14
Hardwaremen, etc.	....	9
Seed and Agricultural Merchants	....	8
Chemical Disinfectant Manufacturers	....	3
Electrical Supplies	....	1
Manufacturing Chemists	....	1

Of these, 101 applications were granted by the Health Committee, and 1 refused, the premises being considered unsuitable.

One dealer, after several applications being made to him, defaulted regarding payment of the statutory fee, and his registration was accordingly cancelled.

Shops Act, 1934 ; Section 10.

The duties which fall upon the Health Department under this Section are in respect to ventilation, temperature, sanitary accommodation, lighting, washing facilities, and accommodation for the taking of meals, for persons employed in or about the business of the shop.

Routine inspection is now in progress and, during the year, 452 visits have been made. 84 contraventions of the Act and Section were dealt with.

In 3 cases, where premises were not provided with suitable and sufficient sanitary conveniences and such accommodation was otherwise conveniently available, certificates of exemption were issued under the provisions of the particular sub-section.

Staff Changes.

I have again to record a number of Staff changes. Mr. Isaac Clark, Assistant Inspector of Factories and Workshops, retired on superannuation in June, after 34 years' service with the Corporation, whilst District Inspectors Ralph W. Suddick, Herbert W. Grieves and Maurice W. Swales resigned on taking up service as Sanitary Inspectors to the Urban District Councils of Longbenton, Edmonton and Spennymoor, respectively.

Conclusion.

In conclusion, Sir, I would express to you my sincere appreciation of your unfailing support and guidance afforded to me at all times, and to the whole of the Staff I tender thanks for assiduous attention to their various duties.

I am, Sir,

Your obedient servant,

W. GRAY,

*Chief Sanitary Inspector,
Inspector of Common Lodging Houses, etc.*

Health Department,

Town Hall,

15th May, 1937.

Appendix A.

CITY AND COUNTY OF NEWCASTLE UPON TYNE.

A STUDY OF THE DIETS OF SIXTY-NINE WORKING CLASS FAMILIES IN NEWCASTLE UPON TYNE.

1.—INTRODUCTORY.

The dietary survey, of which this report is the record, was not undertaken as an academic exercise, but as a practical enquiry into the food consumption and expenditure of certain working class families in Newcastle during the autumn of 1934. It may be helpful, therefore, to describe briefly the historical and social setting of the investigation.

During the early years of the present decade, Newcastle in common with the other Tyneside towns, lay under a heavy burden of unemployment. The measure of this can be gauged from the facts that between 1931 and 1934, out of a population of approximately 285,000 the average number of persons in receipt of Public Assistance was 19,222. With such a large proportion of the population in circumstances which could only be described as impoverished, special watchfulness was necessary to detect or, if possible, to anticipate the presence of untoward developments.

The first indication of alarm was given towards the end of 1932 in the Annual Report of the Newcastle Dispensary for the previous year. It was stated that "the Committee are gravely concerned about the great increase in poverty, sickness and malnutrition amongst the poorest classes in the City."

Largely as a result of this pronouncement, the City Health Committee requested Dr. J. C. Spence, F.R.C.P., to carry out an investigation into the health and nutrition of certain of the city children between the ages of one and five years. The record of this investigation was published in March, 1934. Dr. Spence's primary conclusion which was to the effect that at least 36% of the children from the poor districts of the city which he had examined, were unhealthy or physically unfit and appeared malnourished, concentrated attention on the urgency of the situation.

A dietary survey carried out by Miss Doris G. Rogers, of the Newcastle Dispensary, during the later months of 1933, emphasised the disparity between the circumstances of employed and unemployed families and the inadequacy of the food supply of the latter when compared with the recently issued recommendations of the Nutrition Committee of the British Medical Association. A similar enquiry into the diets of 15 unemployed and 9 employed

families conducted by the staff of the Maternity and Child Welfare Section of the City Health Department, only served to confirm these observations.

Both these surveys were of a relatively simple character, being based in the main on personal enquiries as to the purchases made by housewives over definite periods, a strictly quantitative study being out of the question in the circumstances. Nevertheless, the value of these enquiries as indicators of the trend of events should not be under-estimated.

There had thus been accumulated a body of evidence, some of real significance, as in the case of Dr. Spence's findings, the remainder largely suggestive, which, re-inforced as it was by a number of unconfirmed impressions and opinions, justified the City Health Committee in setting on foot an enquiry of a more ambitious character. It was accordingly decided to undertake a comprehensive dietary survey of a number of working class families in different parts of the city.

The study was carried out in September, 1934, and the families were selected so as to be representative as far as possible of the working class population. Some measure of special selection was inevitable, as families who were likely to be non-co-operative were obviously avoided. The main objective of the investigation was to compare the diets of unemployed and employed families whether domiciled in "old houses" or living upon "new housing estates." For this purpose, a number in each of the employed and unemployed groups was taken from the old dwellings and the rest from houses on new estates. The number of families studied and their distribution amongst the various sub-groups are tabulated below. Attention is directed to the identifying initials by which these various categories will be referred to subsequently.

	Total No. of families studied.	No. of families in old houses.	No. of families on New Housing Estates.	Identifying Initials.
Unemployed	38	24	14	U.O.H. Unemployed Old Houses. U.N.E. " New Estates.
Employed ..	28	18	10	E.O.H. Employed Old Houses. E.N.E. " New Estates.
Widows	3	2	1	W.O.H. Widows Old Houses. W.N.E. " New Estates.
	69	44	25	

2.—OCCUPATION OF WAGE-EARNERS.

The occupations of the employed wage-earners are classified as follows :—

labourers, including building trade labourers	
and one chimney sweep	9
metal workers, including plumbers and	
fitters	4
indoor workers, including shop attendants	
and a caretaker	4
transport workers, including 'bus drivers and	
carters	4
outdoor agents, including one advertising	
agent	3
railway workers 2 ; joiners 2.	

Some children of the employed families were also wage-earners, namely :—

boys, 3 (pit boy, butcher's boy and office boy) ;
girls, 4 (3 maids and 1 dentist's assistant).

Amongst the unemployed families 3 juveniles were employed as follows :—

boys, 2 (labourer and mine firer) ;
girl, 1 (packer).

The heads of all the unemployed families except one had been out of work for periods ranging from six months up to nine years preceding the enquiry.

3.—PERSONNEL EMPLOYED IN THE STUDY.

The practical part of the investigation was conducted by three specially selected Health Visitors working under the personal direction and instruction of Miss M. L. Clark, who has had long experience in the conduct of dietary investigations. The Health Visitors selected had previously assisted in the dietary investigation under the auspices of the Newcastle Health Department to which reference has already been made. On that occasion they gave convincing evidence of their ability to conduct the present more exacting enquiry.

4.—METHOD OF INVESTIGATION.

The method employed was essentially the same as that of Paton, Cathcart and their colleagues. It consists in weighing, measuring and recording all foodstuffs in the house on the first and on the last day of study and also food purchased during the

investigation. The daily out-goings of waste are also recorded. The period of study for each family lasted a week, and the investigator spent some time daily in each house carrying out the weighings and measurements and obtaining the information required. Care was taken throughout to check the amounts purchased by weight, including canned and packet foods. The housewife had been previously instructed to collect all the inedible and edible wastage, such as peelings, meat and fish bones, bread and potato waste, etc., into separate parcels, paper being provided for the purpose. Food supplied to dogs and cats was also ascertained as far as possible and reckoned as waste. From the data thus obtained the net amounts of different foods eaten by the family over the period were determined. Purchases of sweets, ice cream, etc., by children, or from the "fish and chip" shops, were ascertained by enquiry and checked so far as possible. Account was taken of all meals taken in the house by each member of the family and of meals which did not come from the family larder. The latter were approximately assessed in terms of diet-man-values and deducted from the total diet-man-value of the family. The commonest evaluations used were breakfast $\frac{1}{3}$ rd, dinner $\frac{1}{3}$ rd, tea and supper combined $\frac{1}{3}$ rd, *i.e.*, of the appropriate man-value, but this proportion was occasionally altered according to variations in the relative sizes of meals in different families. Meals eaten in the houses by visitors were similarly assessed and added to the total diet-man-value of the family.

Most of the members of each family were weighed during the survey. Blood hæmoglobin was also determined in the majority soon after the research was finished.

5.—ANALYSIS OF FOODS.

Special chemical analysis had to be made of some foods bearing local names. Analyses for protein, fat and carbohydrate were carried out by the City Public Analyst or in the Ministry of Health Foods Laboratory ; mineral analyses were made by Dr. R. A. McCance and Miss Widdowson, of King's College Hospital, London, who also supplied figures for some other foods not listed in analytical tables.

6.—CALCULATION OF RESULTS.

The family co-efficients suggested by Cathcart and Murray and the tables of food values of Plimmer, Sherman, McCance and Lawrence, McCance and Shipp, and Hutchison and Mottram were

employed. Account was taken of the loss of nutrients from some foods through cooking, a precaution made possible by the use of unpublished data kindly supplied by Dr. McCance and Miss Widdowson. Losses from cooking occur when food-stuffs are boiled and the water thrown away. "Cabbage water" for example contains on the average 61.6 per cent. of the total calcium and 49.3 per cent. of the total protein present in the raw vegetable.

7.—STANDARDS OF COMPARISON.

The standards we have adopted for comparison are : Calories 3,000, total protein (animal and vegetable) 80 gm., animal protein 37 gm., calcium 0.68 gm., phosphorus 1.32 gm. and iron 15 mg. per man daily. These standards although not all based on indisputable evidence have been assented to by most workers on nutrition as adequate for the average man of a community weighing 70 kg. The community would of course include men engaged in sedentary occupations, light work and hard work. The standards are averages obtained from numerous laboratory and dietary studies and are therefore only comparable with average and not with individual diets. Table I. sets out the standards adopted, together with the daily intake of nutrients per man value for the various groups and sub-groups investigated. Certain other relevant information as to rent, food expenditure and income is also included.

The outstanding feature of the present enquiry was the occurrence of wide variations from the mean values. It therefore seemed more appropriate to compare the diets and their constituents with ranges or zones of values which were regarded as standard, rather than with the usual recognised standards themselves. Accordingly, ranges of the more important nutrients have been chosen so that diets providing amounts inside these limits may be regarded as sufficient.

The ranges adopted which are also indicated by horizontal lines in Table II. are as follows :—

Calories	...	...	2,500	—	3,499.
Protein	...	...	70	—	109 gms.
Animal Protein	...	...	30	—	59 gms.
Calcium	...	...	0.5	—	0.999 gms.

The selection of these ranges is based on the recommendations of experienced investigators in nutrition, but it does not necessarily follow that individual diets containing lesser or greater amounts of nutrients than those inside the ranges are to be judged in-

sufficient or excessive. To pronounce with certainty on the precise requirements of every individual in a community would be to presume a more exact knowledge of human nutrition than we possess. It is a fundamental biological fact that variations exist among all living organisms. This applies to food requirements as well as to body functions, but, in the present state of knowledge, it is impossible to state the extent of variations in food requirements for different individuals. For this reason and to avoid misunderstanding the following terms are used in appraising individual diets in relation to these ranges: "within the range," "above the range" and "below the range." In the case of gross deviations from the range the terms "deficient" or "excessive" are employed.

RESULTS.

8.—AVERAGE COMPOSITION OF DIETS AND FREQUENCY DISTRIBUTION.

The composition of the family diets in terms of pure nutrients is summarised in Table I. The average for the whole 69 families taken at its face value suggests that the diets as a whole were fairly adequate when judged by the quoted standards. Calories, total protein and animal protein may be considered as practically sufficient. The quantity of iron is exactly standard but calcium and phosphorus are deficient to the extent of about 8 per cent.

The general import of the averages in Table I. should not be unduly stressed. That their presentation of the facts requires further amplification is evident from Table II., which shows the frequency distribution of representative constituents of the diet, Calories, total protein, animal protein and calcium. The values extend over a very wide range, the scatter being more marked in employed than in unemployed families. On account of the wide variation in consumption of nutrients, which is the most conspicuous feature of the results, the means lose a good deal of their apparent significance. The range of intake per man value as regards Calories extends from 1,846 to 5,261 and of calcium from 0.24 gms. to 1.41 gms. In these circumstances and in view of the small number of data the means of the two major groups (*i.e.*, unemployed and employed) and four sub-groups (Table I.) give

an imperfect picture of the relative nutritional value of the diets in these groupings. It will be found more informative to study the *range of variation* in the consumption of nutrients as experienced in the various groups and sub-groups.

All families. In the 69 families, the intake of Calories was below the selected range in 25 per cent., calcium in 35 per cent., total protein in 32 per cent. and of animal protein in 42 per cent. The intakes were above the range for Calories in 20 per cent., calcium in 10 per cent., total protein in 12 per cent. and animal protein in 12 per cent. The Calorie, calcium, total protein and animal protein contents in the remaining diets were within the range.

Unemployed and Employed. Considering the unemployed and employed groups separately the Calorie content was below the range in 31 per cent. of the former and in 18 per cent. of the employed, and above the range in 16 per cent. of the unemployed and in 25 per cent. of the employed.

In 2 widows' families the Calorie content was within the range and in one above the range. Four employed families consumed 4,500—5,499 Calories, which was almost certainly an excessive amount, whereas the three highest intakes amongst the unemployed were between 4,000 and 4,249 Calories.

The distribution of the calcium intake shows no appreciable difference between unemployed and employed except that the maximum intake and percentage above the range was higher in the latter (*i.e.*, 1.4—1.49 gm., 2 families) than in the unemployed (*i.e.*, 1.1—1.19 gm., 2 families). Calcium intake below the range was as common amongst the employed as the unemployed, being found in about 35% of the families in each group. It was less than 0.4 gm. and therefore deficient in 6 unemployed, 3 employed families and one widow's. The intake of calcium in two widows' families was within the range and in one below the range.

The intake of total protein was below the range in 29 per cent. of the unemployed and in 36 per cent. of the employed families and of animal protein in 45 per cent. and 32 per cent. respectively. The difference regarding total protein is too small to be important but that between the figures for animal protein is too large to be ignored and suggests, when taken together with the fact that 21 per cent. of the employed but only 5 per cent.

of the unemployed consumed animal protein above the range, that the unemployed as a whole consumed less animal protein than the employed families. Three unemployed and 4 employed families consumed less than 60 gm. of protein which was definitely below the standard range. One unemployed and 3 employed families had more than 130 gm. of protein daily which appears to be an excessive amount. It would be illogical to speak of a deficiency of animal protein because it is not strictly essential for life. It is, however, extremely probable that amounts above 70 gm. are excessive. One unemployed and 2 employed families were in this category. Two of the widows' families consumed amounts of total protein within the range and one below the range. The intake of animal protein was below the range in all three.

The general feature of the frequency distribution is a larger proportion of unemployed than of employed at the lower level of consumption of Calories, calcium and animal protein, and correspondingly smaller proportions at the higher levels. Regarding total protein, the difference of 16 per cent. in favour of the employed above the range is offset to some extent by one of 7 per cent. in favour of the unemployed below the range.

If attention is confined to the mean values in the unemployed, employed, O.H. and N.E. groupings (Table I.) it would seem that on the average the diet of the unemployed was poorer than that of the employed and the diet of the N.E. families poorer than that of the O.H. families. These differences would seem to be attributable in the main to the U.N.E. families since the average diet of this sub-group is lower than that of any of the others and so must have affected the means in both the unemployed and N.E. groups. The wide variation round the means throws some doubt on the validity of this inference and statistical analysis reveals only the following significant differences between them, the term significant being interpreted in its formal statistical sense, *i.e.*, not likely to be due to chance :—

- 1. All unemployed families consumed significantly less fat and animal protein than employed.**
- 2. Unemployed families on new housing estates consumed significantly less Calories, fat and animal protein than employed families resident on new housing estates.**

These differences are confirmed for Calories and animal protein by the frequency distributions in Table II.

Old Houses and New Houses. Comparisons between O.H. and N.E., between U.O.H. and U.N.E. and between E.O.H. and E.N.E. did not reveal any significant differences. On the other hand, the means are uniformly lower in the unemployed than in the employed whether the comparisons are made with or without reference to housing. This consistency suggests that all the differences are real. It would, therefore, seem that the average diet of the unemployed families was on the whole poorer than that of the employed, but as Table II. shows there was very considerable overlap in the diets of individual families.

9.—DIETS BELOW THE RANGE IN CALORIES, TOTAL PROTEIN, ANIMAL PROTEIN OR CALCIUM.

Inspection of those diets falling below the range in either Calories, total protein, animal protein or calcium (Table II.) disclosed that most of them were also below the range in other constituents. To illustrate this point the diets were grouped according to the intake of Calories and averaged in groups (Table IIIa). Total protein, fat, carbohydrate, phosphorus and iron are seen to increase with Calories, whereas animal protein rises and then falls and calcium rises somewhat irregularly. The changes in man-value, rent and food expenditure are not consistent. In two only of the 41 diets listed in Table IIIa. did the calcium intake reach the standard level, 0.68 gm. One of these diets contained 0.75 gm. calcium and 4,098 Calories and the other 0.78 gm. calcium and 2,693 Calories. Some other diets in this grouping are noteworthy on account of extreme variations in their constituents. One had 3,509 Calories but only 17.9 gm. animal protein, another 3,190 Calories but only 11.3 gm. animal protein and 0.24 gm. calcium, and a third 2,646 Calories, 40.6 gm. of animal protein and 0.65 of calcium. The lowest intake of iron was 7.2 mg. in a diet of 2,099 Calories. This was an E.O.H. diet ; and its content of other nutrients was, total protein 52 gm., animal protein 17.5 gm., calcium 0.26 gm., and phosphorus 0.61 gm. Another very low diet, also in an E.O.H. family contained 1,846 Calories, 53 gm. total protein, 20 of animal protein, 0.41 of calcium, 0.83 of phosphorus and 10.9 mg. of iron. These 2 diets were doubtless deficient in every respect. The highest iron intake within this grouping of diets was 20.9 mg. in a diet of 2,413 Calories.

The same group of diets was classified according to size of family and the constituents averaged in groups (Table IIIb).

All nutrients except animal protein, which changed but slightly, fell in general with increase in man-value up to the 7.0 man-value level. Food expenditure also fell, but rent showed no constant change. The mean intake of nutrients of families in the 2–2.9 man-value group exceeded that of families in the 5–5.9 group by the following percentages : Calories 11, protein 21, animal protein 13, fat 9, carbohydrate 11, calcium 51, phosphorus 27 and iron 12.

Summarising this analysis it would seem—

- (a) **that the Calorie content of the diets is a measure of the total protein, fat, carbohydrate, phosphorus and iron, but not of the calcium or animal protein contents, and**
- (b) **that the larger the family the lower are the food expenditure and intake of all nutrients per man except animal protein.**

10.—DIETS WITHIN THE RANGE IN CALORIES, TOTAL PROTEIN AND ANIMAL PROTEIN.

The diets in this category have been grouped in the same way as the others. The averages are shown in Table IV. (a and b). Seven diets fell into the 2,500—2,999 Calories group and seven into the 3,000—3,499 group. All other nutrients and food expenditure rise with increase in Calories while rent falls slightly and man-value remains almost unchanged. The decrease in rent and increase in food expenditure are consistent with one another and with the increase in consumption of nutrients, for it might ordinarily be expected that the lower the rent the greater would be the food expenditure and, consequently, the consumption of food.

The man-value classification shows that all nutrients and food expenditure fell while rent rose with increase in man-value.

11.—DIETS ABOVE THE RANGE IN CALORIES, CALCIUM, TOTAL PROTEIN OR ANIMAL PROTEIN.

The diets above the range were grouped according to Calorie content and man-value and averaged with the results shown in Table V. (a and b). Total protein, carbohydrate, calcium and iron run parallel with Calories. The general trend of fat and phosphorus is in the same direction but animal protein shows little correspondence with Calories, and man-value, rent and food expenditure none.

In the man-value classification total protein, animal protein, fat and iron fall as man-value rises. The changes in other constituents are irregular, but the larger families, with man-values above 3, are below the smaller, where the man-values are less than 3, in the consumption of every food constituent. They are lower also in food expenditure but higher in rent.

In general, it would appear from this analysis that—

- (a) **the Calorie contents of these diets may be regarded as an approximate indication of the amounts of the other nutrients considered except animal protein, and**
- (b) **the larger families had on the whole poorer diets and spent less money per man-value weekly on food than the smaller families.**

It will be observed that the total of families included in Tables III., IV. and V. is 71, *i.e.*, two more than the number studied, 69. The reason for the increase is that two diets which were below the range in animal protein and were therefore put in Table III. were above the range in Calories and so were included in Table V. The details of these diets are noteworthy. They are :—

	<i>Calories.</i>	<i>Total Protein.</i>	<i>Animal Protein.</i>	<i>Calcium.</i>	<i>Phosphorus.</i>	<i>Iron.</i>
Diet A	3,509	79.5 gm.	17.9 gm.	0.58 gm.	1.24 gm.	16.3 mg.
„ B	4,098	106.6 gm.	29.2 gm.	0.75 gm.	1.96 gm.	20.5 mg.

These examples serve to show to what extent diets may be poor in some respects although they appear adequate or even excessive in others. Thus, Diet A is deficient in animal protein and low also, but to a less extent, in calcium and phosphorus whereas the other nutrients are present in adequate amounts; Diet B is probably too high in Calories while animal protein is on the low side, the other nutrients being quite adequate.

12.—COMPARISON OF TABLES III., IV. AND V.

To illustrate the general characteristics of these diets in the several Tables and to compare the differences, the figures were averaged and the differences calculated on a percentage basis. The results are shown in Table VI.

The dietary constituents increase uniformly from Table III. through IV. to V. The increase is least marked for carbohydrate, the cheapest food-stuff, and most marked for calcium and animal protein which are relatively expensive nutrients. Food expenditure per man-value per week also increases from Table III., through

IV. to V. but much more markedly than any of the food constituents. This indicates that the costs of the diets within the range and above the range were higher on the average than those below the range. The man-value per family moves in the opposite direction to the food constituents and food expenditure. The larger families would appear, therefore, to have had poorer diets than the smaller and to have spent less on food. Neither the dietary constituents nor food expenditure would appear to have been substantially influenced by the rent in the families studied, for this was lowest for the families in Table III. and highest for those in IV. Had diet been appreciably affected by rent, this would have been highest for the families in Table III.

13.—COST OF NUTRIENTS.

The average number of Calories and grammes of protein and calcium obtained per penny of total money spent on food are shown in Table VII. The values were obtained by dividing the total amounts of these nutrients in each diet, exclusive of all foods supplied free of cost, by the amount of money spent on food. Garden produce was reckoned at wholesale prices. The figures do not indicate any appreciable differences between the O.H. and N.E. families whether unemployed or employed or between all unemployed and all employed in regard to calcium. The unemployed, however, obtained per penny expended, 22 per cent. more protein and 23 per cent. more Calories on the average than the employed; these differences were found to be statistically significant. The most probable reason for the higher cost of Calories and protein to the employed than to the unemployed is the fact that the former consumed more animal protein and fat which are expensive sources of protein and Calories respectively.

14.—RENT, MAN-VALUES AND FOOD EXPENDITURE PER MAN-VALUE.

The average rents, man-values and expenditure on food per man weekly are stated in Table I. and the family distribution of these is given in Table II. under the headings of the several sub-groups.

The average rent was lowest in the U.O.H. group, 7.86s. per week. The differences between the other groups are slight, but the relatively high rent in the U.N.E. group, 10.27s. per week, is striking. On the average, rent was 21 per cent. higher for

the N.E. than for the O.H. families. The rent did not appear to be related to intake of food or expenditure on food per head. For example, unemployed living in "old houses" with an average rental of 7.86s. spent 53.5d. per man-value per week, while similar families on "new estates" paying on an average 10.26s. weekly for rent, spent 54.3d. per head on food.

The differences between the average man-values are so small and the distribution so wide especially in the two employed groups that no importance can be attached to them.

The distribution of food expenditure per man-value in the different groups is very wide particularly in the employed sub-groups (O.H. and N.E.) The average expenditure under this heading was practically identical in the two unemployed, 53.5d. and 54.3d., and the two employed sub-groups, 72.5d. and 75.6d., respectively. The averages of all the unemployed, 53.94d., and all the employed, 73.62d., may therefore be compared. These show that the expenditure of the employed exceeded that of the unemployed by 36.5 per cent. This difference is in all probability due, as pointed out below, to the purchase of (a) more expensive foods and (b) greater quantities of fat and animal protein and probably of other foods, by the employed than by the unemployed.

15.—QUALITATIVE ANALYSIS OF CONSUMPTION OF FOOD STUFFS.

The various kinds of foods and beverages, including different cuts of meat, brands of cereals and vegetables amounted to 151. The list of these foods has been abbreviated so as to illustrate dietary and economic habits, and is set out in the Appendix to the report. The Appendix shows the number and percentage of families who consumed each article of food and also the average intake per man of those families who ate the food. Statistical tests were applied to the most outstanding differences between the percentages of unemployed and employed families consuming important foodstuffs, disregarding housing conditions. Statistical analysis of the average quantities of foods consumed was not justifiable because the number of families involved was too small. It will be convenient to discuss in the first place the differences found to be statistically significant.

These are dealt with in sub-paragraph (a). Those differences which were not found to be capable of statistical analysis, or were not statistically significant, are discussed in the subsequent sub-paragraphs.

Statistically Significant Differences.

(a) *Cakes, fresh tomatoes, butter, fresh milk, bacon and boiled ham.*

More employed families consumed cakes, fresh tomatoes, butter, fresh milk, bacon and boiled ham than unemployed families, the differences between the numbers of families in the two groups being greater than is likely to have arisen by chance.

For instance, 76 per cent. of the unemployed families consumed butter and 66 per cent. fresh milk compared with 96 per cent. and 100 per cent. respectively of the employed. The average consumption of fresh milk was low throughout, according to the commonly accepted standards. For the four main sub-groups it was respectively :—

Unemployed—Old Houses	...	0.13 pints	} Per man- value per diem.
Unemployed—New Estates	...	0.26 „	
Employed—Old Houses	...	0.19 „	
Employed—New Estates	...	0.26 „	

The relative costliness of cakes, tomatoes, fresh milk, butter, bacon and ham is probably the main explanation for these differences in consumption.

Fifty-three per cent. of unemployed and only 7 per cent. of employed took a proprietary brand of dried milk which many of the unemployed received free from the City Health Department. It has been observed in Newcastle that many of the families who receive dried milk free of cost buy only enough liquid milk for tea ; some indeed consume no fresh milk at all, but use instead condensed skimmed milk all of which in the present study came from countries outside Great Britain. Skimmed milk, as is well-known, is little inferior in nutritive value to whole milk, the only difference between them being that the bulk of the fat and A and D vitamins are absent from skimmed milk, but these nutrients can easily be supplied by other suitable fats. Skimmed milk, like whole milk, is an excellent source of protein of high biological value, of calcium and of other inorganic elements. In the present study only three families, two unemployed and one employed, consumed liquid skimmed milk. There is no doubt, as was verified by enquiry, that more would have bought skimmed milk in liquid form if it had been easily obtainable ; but little or none is placed on the market in this country. It is known that much of the skimmed milk produced is used for purposes other than human food, mainly the feeding of pigs and poultry, and some may be run to waste.

It is difficult to see how the lower consumption of butter by the unemployed than by the employed can be attributed entirely to economic causes, because butter at that time could be obtained almost as cheaply as margarine. Possibly a margarine-eating habit established when butter was more expensive was also a factor.

Differences which were not found to be capable of Statistical Analysis or which were not Statistically Significant.

(b) *Cereals.*

Bread and flour have been combined because of the very common practice of home baking in the North of England. The great bulk of the bread weighed in the houses at the beginning and end of the study was home-made. The consumption of white flour and bread was almost identical in the 4 sub-groups, about 10 ozs. or 1,000 Calories per man-value daily. The great bulk of the bread consumed was white; only about 45 per cent. of all the families consumed brown bread at all. One U.O.H. family consumed only brown bread.

Biscuits, tapioca and sago and rice show no clear differences between the sub-groups in numbers of families or quantities consumed. About 30 per cent. of all families used oatmeal.

(c) *Jams and Sugar.*

The fact that only 36 per cent. of the U.N.E. families purchased jam is probably fortuitous; in the other 3 sub-groups the proportions were 71, 70 and 67 per cent. There was little difference in the quantities consumed per man-value in the 4 sub-groups, about 0.6 oz. daily. The quantities of marmalade consumed were small in all groups. The average sugar consumption by all the sub-groups together was about 2.4 ozs., 280 Calories per man daily.

(d) *Fruit.*

Apples were used fairly extensively by all groups, the proportions of families who used them being 75, 64, 78 and 100 in the 4 sub-groups in the order in which they appear in the table. The percentages for bananas were 46, 43, 50 and 70, thus suggesting slightly higher consumption by the employed families. Other fruits consumed by a minority of the families included oranges, pears, plums, grapes, bilberries, blackberries, grape-fruit and dried fruits.

Potatoes were consumed to an almost equal extent by the 4 sub-groups, about 5.9 ozs., 146 Calories, per man daily. It is noteworthy that nearly twice this amount of energy was derived

from sugar and nearly seven times from white bread. The popularity of the remaining vegetables was in the following descending order : onions, fresh tomatoes, carrots, cabbage, dried peas, turnips, leeks, beetroot, cauliflower, lettuce. The low consumption of lettuce is surprising in view of the season, September. The data suggest that cauliflower was used more extensively by the E.O.H. families, 44 per cent. against 10—14 per cent. of the others. The reason was probably a question of taste or habit, it could scarcely be price, because this vegetable was least popular with the E.N.E. families.

Other vegetables consumed by a minority of the families were cucumber, rhubarb, parsnips, green peas, french beans, radish and celery.

(e) *Dairy Products.*

Consumption of dairy products as regards those where statistical differences were found to occur has been dealt with in sub-paragraph (a) above, but the following additional information is of interest. Only one unemployed family but three employed families purchased cream. A relatively large number of families, about 80 per cent., consumed cheese, which is one of the best and cheapest sources of animal protein and calcium. The average amount consumed per man-value of the employed exceeded that of the unemployed by about 44 per cent. This difference is probably due to the fact that cheese sandwiches feature largely in the workman's mid-day lunch.

Eggs were cheap in Newcastle at the time of the study, hence their popularity which was not far from equal in the 4 sub-groups.

The great majority of families in all groups purchased condensed skimmed milk, the percentages varying from 67 per cent. in the E.O.H. to 92 per cent. in the U.O.H. The amounts consumed per man were almost equal in the U.N.E. and in the two employed sub-groups and these amounts were exceeded by the U.O.H. families by about 35 per cent. About one-fifth of the employed families purchased condensed full cream milk, but the number of unemployed families who used it was almost negligible. It would, therefore, appear that condensed skimmed milk was more popular with the unemployed and condensed whole milk with the employed. The reason for this qualitative difference is most probably one of price ; for condensed skimmed milk at the time generally cost about 3d. and condensed whole milk about 6d. per lb. tin. Although these data only suggest the existence of the above difference the case for its reality is greatly strengthened

by the fact that the unemployed purchased all their food at a lower rate than the employed.

The great bulk of the dried milk was consumed by the unemployed, particularly the U.O.H. families. Most of it was a proprietary brand, supplied gratis from the Welfare Centres.

(f) *Fish.*

The low consumption of fish is surprising but the paucity of data makes it impossible to say whether it was more popular with one or other group or sub-group. There is no indication that expensive fishes were purchased instead of equally, or more, nutritious fish of the cheaper varieties such as haddock and herring. Herrings were cheap in Newcastle at the time of the survey and the small amounts consumed suggest that this class of fish is not popular with the working classes of the city.

(g) *Meat.*

The consumption of bacon has already been considered in sub-paragraph (a). Stewed beef was by far the most popular meat. This would also account for the popularity of onions and carrots, one or both of which was always cooked along with the meat. Stewing is a very economical method of cooking as there is little or no loss from either the meat or the vegetables. Stewing was more popular than the amount of stewed beef consumed would indicate because it was not always possible to be certain whether the mutton purchased was intended for stewing, roasting or frying. Mutton appeared to be slightly more popular with the employed than the unemployed.

The relatively small consumption of the expensive pork and chicken as well as the preponderance of beef over pork sausages are noteworthy. Evidently rabbit is not popular in Newcastle, in spite of its low cost. Liver was fairly widely used by unemployed and employed alike. Other offal and meat products included black and white puddings (10), kidney (9), head and tripe (4), pig's cheek, cows' heel and heart (3). The figures in brackets are the numbers of families using these foods and are an indication of their popularity.

(h) *Canned and Cooked Food.*

The consumption of boiled ham has already been discussed in sub-paragraph (a).

Fried potato chips were the only food in this category used by a bare majority of the families, 35 (including one widow's family) out of 69. The next most popular of these foods was fried fish which was purchased by about one-third of all the families. Baked beans, corned beef and meat pies were consumed by not more than one-fourth of the families. Pineapple was the most popular canned fruit and it was apparently favoured more by the employed than by the unemployed. The other more expensive canned fruits, peaches, pears and fruit salad, were also used more by the employed than by the unemployed. The same applies to canned peas, salmon and boiled tongue. Other foods in this category purchased by a small minority of families were apple tart, meat and fish pastes, polony, pickles, sauces, sardines (used by three unemployed families only), wheat flakes and similar cereal products (seven families), fish cakes, and veal and ham. The numbers of families using these foods varied from ten for sauces to two for veal and ham pies. Proprietary meat extracts and prepared soups were consumed by six and two families, respectively.

In this qualitative analysis it was impossible owing to the small number of families and to the variations in numbers consuming different foods and in quantities consumed to make comparisons between the four sub-groups. There did not appear, however, from the inspection of the detailed results to be any evidence of a marked difference in consumption either qualitative or quantitative as between the O.H. families and N.E. families. Except in the case of fish and chips the relatively expensive and prepared canned foods were bought by a minority of the families, and in regard to many of the foods the number of consumers was extremely small. *There is, therefore, little evidence of generally extravagant buying or of serious decline in home cooking by the families studied.* Indeed, practically all the bread consumed was home baked. Further evidence of the prevalence of home cooking can be seen by comparing the total consumption by all the families of prepared meat and fish with that of meat and fish which required cooking in the home. Prepared meat and fish, including meat pies and fish cakes, amounted to 97.37 lbs.; while the purchases of meat and fish, including all offal, which required cooking amounted to 470 lbs., *i.e.*, about 5 times the amount of meat and fish purchased in the cooked or prepared state.

Fresh meat was consumed by all 69 families and fresh vegetables by all but one. All the employed and most of the unemployed families had fresh fruit, but more of the employed had fish, canned

and cooked meats and canned fruit and vegetables. Two of the 3 widows' families had no fresh fruit or fresh fish, two had canned vegetables but none of them canned fruit.

A partial summary of the data set out in the Appendix is given in Table VIII.

16.—HÆMOGLOBIN CONTENT OF BLOOD.

The estimations were made by Dr. J. B. Tilley, of the Health Department, Newcastle, using the most recent type of Dare hæmoglobinometer, which is graduated so that a reading of 100 per cent. is equivalent to a concentration of 15.9 gm. of hæmoglobin per 100 cc. Dr. Tilley had previously been trained in the use of the instrument and the accuracy of his results with it was checked against readings taken on the same hospital patients by the Haldane instrument. This is standardised so that a reading of 100 per cent. is equivalent to 13.8 gm. hæmoglobin. Readings of the same sample on the Haldane should therefore be somewhat higher than on the Dare instrument. The results obtained were as follows :—

<i>Haldane.</i>	<i>Dare.</i>	<i>Difference</i>
Hb. %	Hb. %	<i>Haldane—Dare.</i>
72	69	3
48	41	7
67	65	2
87	86	1
89	81	8
57	49	8
67	58	9

On the average the Dare readings are about 5 per cent. below the Haldane readings but differences as high as 9 per cent. were obtained. In collaboration with others, many more comparisons of the Dare with the Haldane and photo-electric cell methods have been made. The Dare nearly always gave lower results but the maximum difference was never greater than 9 per cent. of hæmoglobin. On account of these experiences it was decided to regard Dare readings as understating by approximately 10% the values which would be obtained with the Haldane instrument on the same bloods. The result of this decision, therefore, is that the lower limit of normality of hæmoglobin percentage on the Dare instrument is placed 10% lower than on the Haldane. Since the latter type of hæmoglobinometer is most frequently

employed in this country it is desirable, for purposes of comparison, to fix as far as possible the critical level at which normality ends and anæmia begins with reference to the Haldane instrument. There is, however, some difference of opinion as to the precise position of these critical levels on the Haldane scale for people of different ages of both sexes. It is clear from consideration of the literature on the subject that further research on healthy people of different ages will be necessary before the critical levels can be definitely established, but it would appear that the levels which would meet with the greatest measure of assent are 80% for males over 12 and 75% for women and children below 12 years. It is probable that the hæmoglobin values of the great majority of cases of anæmia would fall below these levels, which, in accordance with the comparisons already quoted, correspond with 70% and 65% respectively on the Dare instrument. It was, therefore, decided that all hæmoglobin values falling below 70% in males over 12 and below 65% in women and children, should be regarded as indicative of anæmia.

The hæmoglobin values of the employed and unemployed groups are compared in Table IX. The mean hæmoglobin percentages are practically identical in both groups for males, females and children respectively.

As regards the distribution of the values, this was approximately the same for the males of both categories and it may be inferred that there was no difference between the hæmoglobin content of the blood of employed and unemployed males.

The distribution of values shown by the women and children in the employed and unemployed groups show some differences.

The numbers and percentages of **anæmic** persons, as previously defined, were as follows :—

Women.

Employed Group (4 out of 39) = 11%

Unemployed Group (12 out of 37) = 32%

Children (under 12).

Employed Group (10 out of 59) = 17%

Unemployed Group (17 out of 79) = 22%

As regards the percentage of anæmic women the difference between the employed and unemployed groups is rather more than would be expected to occur by chance. On the other hand there are relatively more women in the employed group who have hæmoglobin percentages of the moderately low order of 65—69%, and rather fewer at the high level of 80% hæmoglobin or over

(Table IX.) There is therefore no evidence of a general shift downwards in the scale of values shown by the unemployed women and the mean values in the two groups, are as previously indicated, nearly identical.

The children in the two groups show the same type of differences, namely, slightly more persons in the unemployed group falling below the critical anæmia level, *i.e.*, 65% hæmoglobin; proportionately fewer at the moderately low level of 65—69% hæmoglobin and more in the high group of 80% or over.

The differences are not more than might have arisen by chance, though they confirm those recorded for the women in showing more individuals in the unemployed group at the two ends of the scale.

Adopting the criterion of anæmia as defined in the preceding paragraphs, this analysis then suggests that there is a somewhat higher proportion of anæmic women amongst the unemployed.

17.—HÆMOGLOBIN VALUES IN RELATION TO INTAKE OF IRON.

In Table X. is shown the distribution of hæmoglobin values in relation to the iron intake per man-value daily. The hæmoglobin values are classified according to whether they fell above or below the suggested anæmia level, 70 per cent. for men and 65 per cent. for women and children. Of the 2 anæmic men, one consumed 5—10 mg. and one 15—20 mg. of iron daily. Of the 16 anæmic women, there were 9 in the 10—15 mg. group, 3 in each of the 15—20 and 20—25 mg. groups, one in the 25—30 mg. group, and none in the 5—10 mg. group. The 27 anæmic children fell into the following groups:—17 in the 10—15 mg. group, 3 in each of the 5—10 and 15—20 mg. groups, 4 in the 20—25 mg. group and none in the 25—30 mg. group. It is, therefore, clear that there is no relation between the hæmoglobin of the blood and the amount of iron in the food consumed during the week of the study. It should not, however, be inferred that there is no relation between diet and the hæmoglobin content of the blood as other nutritional factors have also to be taken into account. Thus the bulk of the hæmoglobin molecule consists of a protein complex, the metabolism of iron is affected by the calcium content of the diet, and anæmia may be caused by a deficiency of vitamin C. It is therefore conceivable that some of the deficiencies in hæmoglobin were caused by deficiency of protein, calcium or vitamin C in the diet.

18.—WEIGHTS AND HEIGHTS OF INDIVIDUALS.

The weights and heights of members of the families studied were recorded in the Welfare Centres, the number of refusals being low. Babies were weighed and measured naked, the height being taken by means of a special measuring apparatus. The school children were measured without shoes and upper garments, while adults were measured in ordinary indoor attire with shoes removed. The averages are shown in Table XI.

In view of the fact that the numbers of children at different ages were too small to allow comparison of weights and heights being made between employed and unemployed families, the data for all the children were grouped together according to the age groups. Every person aged 20 years and over was reckoned as an adult and the measurements of the small number between 14 and 20 years were excluded from the averages. In the unemployed group there were 33 men and 39 women, in the employed group 28 men and 28 women, so that the numbers were large enough to justify averaging them separately. The only noteworthy difference between the means is that between the unemployed and employed men, the latter being the heavier by 13 lbs. 4 ozs., a difference which was found to be significant on statistical analysis. The cause of this difference is not clear. If the lower weight of the unemployed was due to their diet being less adequate than that of the employed, similar differences would be expected in the women and children. The other conceivable causes are:—

- (a) that these men lost their employment in the first instance wholly or partly because of poor physique and
- (b) that the loss of weight was due to wasting of muscular tissue which is a physiological result of lack of exercise.

It is impossible to say to what extent (a) was a contributory cause of the lower weight of the unemployed men. The fact that no material differences were found in the weights of women and children would suggest that (b) was an important factor but not necessarily the only one.

SUMMARY AND CONCLUSIONS.

1. The intake of food of 69 families in Newcastle selected so as to be representative as far as possible of the working class community was determined quantitatively for a week in September, 1934. The bread-winner in 38 families had been unemployed for from six months up to nine years; 24 of these families lived in old houses and 14 on new estates. The bread-winner was employed in 28 of the families of whom 18 resided in old houses and 10 on new estates. There were also 3 widows' families.

2. The average diet of the 69 families supplied, per man-value daily, 2,960 Calories, 82 gms. of protein (36 from animal sources), 94 of fat, 445 of carbohydrate, 0.63 of calcium, 1.23 of phosphorus and 15 mgs. of iron. The average man-value was 3.6, the expenditure on food per man-value per week being 62.4d. As judged by commonly accepted standards this diet is just about sufficient in all these nutrients, except calcium and phosphorus which are both deficient by about 8 per cent.

3. Wide variations were found in the consumption of nutrients of different families. The ranges in the 69 families were:—Calories, 1846—5261; protein 51—161 gm.; calcium 0.24—1.41 gm.; phosphorus 0.61—2.44 gm.; iron 7.2—28.9 mg. per man-value daily. The variations were more marked in the employed than in the unemployed families.

In the frequency distribution of diets according to Calories, total protein, animal protein and calcium contents, more unemployed than employed fell below a range of intake within which sufficiency is considered to lie, for Calories, animal protein and calcium; more employed than unemployed fell above the ranges in Calories, total protein, animal protein and calcium. It is not suggested that all diets below the ranges are necessarily inadequate for the families concerned, because the variations in nutritional needs of individuals are known to be considerable but it is probable that such diets are within the danger zone in regard to the genesis of malnutrition.

Two employed families had less than 1,900 Calories; 6 unemployed, 3 employed and one widow's family less than 0.4 gm. of calcium; 3 unemployed and 4 employed families less than 60 gm. of protein per man daily. These diets were therefore deficient in these nutrients.

Four employed families had 4,500 or more Calories ; 3 employed and one unemployed family had 130 gm. or more protein and one employed family over 90 gm. animal protein daily. These intakes were probably excessive.

4. The average diet of the unemployed was lower than that of the employed in fat and animal protein ; the average diet of the unemployed, new estate, families was lower than that of the employed, new estate, families in Calories, fat and animal protein. These differences were shown on statistical analyses to be greater than would be likely to arise by chance. The differences between the other means could have been due to chance ; but, since the frequency distribution and the averages showed the unemployed diets to be consistently lower in every particular than the employed diets, irrespective of housing conditions, it is very probable that the diets of the unemployed as a whole were inferior to those of the employed.

5. The amounts of energy and protein obtained per penny of money spent on food were 23 per cent. higher in the unemployed than the employed families. Statistical analysis showed that these differences were unlikely to be due to chance. The unemployed therefore purchased these nutrients at lower cost than the employed. The cost of calcium was the same in both groups of families.

The employed spent 36 per cent. more money on the purchase of food than the unemployed, but there was no indication of markedly excessive purchase of expensive foods to the exclusion of equally nutritious cheaper foods by either group of families.

6. There were no important differences between the average man-values in the different groups.

Rent was 21 per cent. higher in the new housing estates than in the old houses but rent did not appear to be closely related to intake of food.

7. The larger families on the whole had less adequate diets and spent less money on food than the smaller families. The Calorie content of the diets gave a rough indication of their composition in the other essential nutrients considered, except animal

protein and calcium, the amounts of which did not always vary in the same direction as Calories.

8. Significantly more employed than unemployed families consumed cakes, fresh tomatoes, butter, fresh milk, bacon and boiled ham. The differences between the numbers in the two groups is most probably related to the greater outlay on food by the employed families. The new estate families consumed on the average 0.26 pint of liquid milk per man daily, the employed, old houses, families 0.19 pint per day, and the unemployed, old houses, families 0.13 pint per day. Seventy-six per cent. of the unemployed consumed butter and 66 per cent. fresh milk; the figures for the employed were 96 and 100 per cent. respectively.

Only three families consumed liquid skimmed milk, but the majority consumed condensed skimmed milk. One-fifth of the employed but only a negligible number of the unemployed used condensed full cream milk.

9. Nearly all the bread consumed was baked at home. Brown bread was used by 45 per cent. of all families. The average total consumption of bread per man-value daily was 10 ozs. (1,000 Calories). Thirty per cent. of families used oatmeal.

The average consumption of sugar by all families, excluding that present naturally in foods or added to prepared foods and dishes such as jams, biscuits and sweets, was 2.4 ozs. (280 Calories) per man-value daily; the figure for potatoes was 5.9 ozs. (146 Calories).

10. Ninety-nine per cent. of families consumed fresh vegetables and 88 per cent. fresh fruit. Thirty per cent. of all families consumed canned vegetables and 17 per cent. canned fruits.

11. All 69 families consumed fresh meat, 71 per cent. fresh fish, and 68 per cent. canned or cooked meat and fish.

12. Stewing was the most popular method of cooking meats.

13. The consumption of canned, prepared and cooked foods was higher among the employed than the unemployed.

14. The hæmoglobin content of the blood was determined in 38 of the men, 76 of the women and 138 of the children included

in the investigation. Using the Dare hæmoglobinometer, readings below 70 per cent. in the men or 65 per cent. in women and in children below 12 years, were considered to be indicative of anæmia. The average hæmoglobin values were : in the men 83%, in the women 73% and in the children 73%.

Adopting the definition of anæmia as previously stated, 2 men (5 per cent. of the total), 16 women (21 per cent.) and 27 children (20 per cent.) were found to be anæmic.

Of the 37 women in the unemployed group, 12 or 32% were anæmic, as compared with only 4, i.e., 10% of the 39 women in the employed group.

There was, however, no general shift downwards in the hæmoglobin level amongst the unemployed group, slightly more in the unemployed group than in the employed having high hæmoglobin values.

No relation could be found between the hæmoglobin levels and the content of iron in the family diets.

15. No difference was found between the heights and weights of children or women in any of the groupings, but the employed men were heavier on the average than the unemployed men by 13.25 lbs. The possible causes of this difference are discussed ; it was probably not due to difference in diet, since a similar difference in weight was not found between the women of the employed and unemployed groups.

ACKNOWLEDGMENTS.

From the collection of the basic data to their final analysis and presentation, this report has been the work of many hands.

We would express our most grateful thanks to the Medical Department of the Ministry of Health, not only for information which has been freely placed at our disposal, but also for much unofficial assistance.

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To the many other members of the team whose assistance may not have been recognised by name elsewhere, our appreciation and thanks are also extended.

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December, 1936.

TABLE I.

Average daily Intake of Nutrients per Man-value ; average Man-value, Rent, Food Expenditure and Income.

	No. of Families	Calories No.	Protein Gms.	Animal Protein Gms.	Fat Gms.	Carbo-hydrate Gms.	Calcium Gms.	Phos-phorus Gms.	Iron Mgms.	Man-value per Family.	Rent per Family per week Shillings.	Food ex-penditure per man-value per week. Pence.	Income per head per week. Shillings.
STANDARDS.		3,000	80	37			0.68	1.32	15				
All families	69	2,960	81.95	36.31	94.55	445	0.627	1.232	15.3	3.60	8.91	62.40	8.07
Unemployed...	38	2,847	79.27	33.03	88.70	433	0.591	1.187	15.0	3.43	8.75	53.94	6.68
Employed	28	3,094	86.24	42.08	103.73	454	0.691	1.307	15.6	3.86	9.33	73.62	9.99
Widows	3	3,143	75.78	23.98	82.94	523	0.497	1.106	15.3	—	—	—	—
Old Houses	44	3,018	84.23	37.55	97.06	452	0.638	1.278	15.3	3.50	8.36	62.15	7.96
New Estate	25	2,857	77.93	34.13	90.12	434	0.608	1.151	15.3	3.80	10.11	63.89	8.25
Unemployed.... (Old Houses)	24	2,958	83.22	35.72	93.20	446	0.626	1.277	15.4	3.34	7.86	53.5	6.44
Unemployed... (New Estate)	14	2,656	72.50	28.43	80.99	411	0.530	1.033	14.4	3.57	10.26	54.3	7.08
Employed	18	3,100	87.10	41.69	104.12	453	0.674	1.308	15.4	3.71	9.02	72.5	10.10
Employed	10	3,085	84.69	42.79	103.01	454	0.721	1.304	16.1	4.12	9.89	75.6	9.80
Widows	2	3,012	70.54	22.90	79.84	503	0.463	1.025	13.5	—	—	—	—
Widows	1	3,404	86.26	27.36	89.15	564	0.566	1.269	19.0	—	—	—	—

TABLE II.

Distribution of Families according to Intake per Man-value daily of Calories, Calcium, Protein and Animal Protein; and Distribution according to Man-value, Rent and Food Expenditure.

	NOS. OF FAMILIES.									% of Total.
	Unemployed.			Employed.			Widows.		Total.	
	Old Houses.	New Estate.	% of Total Unem- ployed.	Old Houses.	New Estate.	% of Total Em- ployed.	Old Houses.	New Estate.		
Calories.										
1,750-1,999.....	—	—	31	2	—	18	—	—	2	25
2,000-2,249.....	2	—		1	—		—	3		
2,250-2,499.....	5	5		2	—		—	12		
2,500-2,749.....	4	4	53	4	4	57	1	—	17	55
2,750-2,999.....	3	3		2	1		—	9		
3,000-3,249.....	3	2		1	2		—	8		
3,250-3,499.....	1	—		1	1		—	1	4	
3,500-3,749.....	3	—	16	2	1	25	1	—	7	20
3,750-3,999.....	—	—		—	—		—	—	—	
4,000-4,249.....	3	—		—	—		—	—	—	
4,250-4,499.....	—	—		—	—		—	—	—	
4,500-4,749.....	—	—		1	1		—	—	—	
4,750-4,999.....	—	—		—	—		—	—	—	
5,000-5,249.....	—	—		1	—		—	—	—	
5,250-5,499.....	—	—		1	—		—	—	—	
TOTALS.....	24	14	100	18	10	100	2	1	69	100
Calcium (Gms.)										
.200-.299.....	1	1	34	1	—	36	—	—	3	35
.300-.399.....	2	2		1	1		1	7		
.400-.499.....	5	2		5	2		—	14		
.500-.599.....	6	5	61	1	1	46	1	1	15	55
.600-.699.....	2	2		3	2		—	9		
.700-.799.....	4	1		2	—		—	7		
.800-.899.....	1	1		1	2		—	5		
.900-.999.....	1	—		1	—		—	2		
1.00-1.09.....	—	—	5	—	—	18	—	—	—	10
1.10-1.19.....	2	—		1	1		—	4		
1.20-1.29.....	—	—		1	—		—	1		
1.30-1.39.....	—	—		—	—		—	—		
1.40-1.49.....	—	—		1	1		—	2		
TOTALS.....	24	14	100	18	10	100	2	1	69	100
Protein (Gms.)										
50-59	2	1	29	4	—	36	—	—	7	32
60-69	4	4		2	4		1	—	15	
70-79	7	7	66	4	2	43	1	—	21	56
80-89	3	1		1	—		—	1	6	
90-99	3	1		2	2		—	—	8	
100-109	3	—		1	—		—	—	4	
110-119	1	—	5	1	1	21	—	—	3	12
120-129	—	—		1	—		—	—	1	
130-139	—	—		—	1		—	—	—	
140-149	1	—		1	—		—	—	2	
150-159	—	—		—	—		—	—	—	
160-169	—	—		1	—		—	—	1	
TOTALS.....	24	14	100	18	10	100	2	1	69	100

Sufficiency of each nutrient is considered to lie between the heavy horizontal lines.

TABLE II.—*continued.*

	NOS. OF FAMILIES.									% of Total.
	Unemployed.			Employed.			Widows.		Total.	
	Old Houses.	New Estate.	% of Total Unem- ployed.	Old Houses.	New Estate.	% of Total Em- ployed.	Old Houses.	New Estate.		
Animal Protein (Gms.)										
10-19	—	2	45	2	1	32	1	—	6	42
20-29	9	6		5	1		1	1	23	
30-39	9	4		3	3		—	—	19	
40-49	4	2	50	1	1	47	—	—	8	46
50-59	—	—		3	2		—	—	5	
60-69	1	—		3	1		—	—	5	
70-79	1	—	5	—	1	21	—	—	2	12
80-89	—	—		—	—		—	—	—	
90-99	—	—		1	—		—	—	1	
TOTALS.....	24	14	100	18	10	100	2	1	69	100
Rent.										
s. d. s. d.										
3 0—4 11....	1	—		1	—		1	—	3	
5 0—6 11....	6	—		4	—		—	—	10	
7 0—8 11....	12	4		2	4		1	—	23	
9 0—10 11....	4	8		8	5		—	1	26	
11 0—12 11....	1	—		1	1		—	—	3	
13 0—14 11....	—	—		1	—		—	—	1	
15 0—16 11....	—	2		1	—		—	—	3	
TOTALS.....	24	14		18	10		2	1	69	
Man-value.										
1.0-1.9.....	—	—		2	—		—	—	2	
2.0-2.9.....	12	4		6	4		—	—	26	
3.0-3.9.....	5	6		4	2		1	1	19	
4.0-4.9.....	5	3		1	1		1	—	11	
5.0-5.9.....	1	1		3	1		—	—	6	
6.0-6.9.....	1	—		1	1		—	—	3	
7.0-7.9.....	—	—		1	1		—	—	2	
TOTALS.....	24	14		18	10		2	1	69	
Food Expendi- ture per Man- value per Week										
s. d. s. d.										
2 0—2 11....	1	—		1	—		—	—	2	
3 0—3 11....	5	5		2	1		1	1	15	
4 0—4 11....	13	6		4	3		—	—	26	
5 0—5 11....	2	2		2	—		1	—	7	
6 0—6 11....	2	—		1	1		—	—	4	
7 0—7 11....	1	—		—	2		—	—	3	
8 0—8 11....	—	1		1	—		—	—	2	
9 0—9 11....	—	—		4	1		—	—	5	
10 0—10 11....	—	—		1	1		—	—	2	
11 0—11 11....	—	—		—	—		—	—	—	
12 0—12 11....	—	—		1	1		—	—	2	
13 0—13 11....	—	—		—	—		—	—	—	
14 0—14 11....	—	—		—	—		—	—	—	
15 0—15 11....	—	—		1	—		—	—	1	
TOTALS.....	24	14		18	10		2	1	69	

Sufficiency of each nutrient is considered to lie between the heavy horizontal lines.

TABLE VI.
Comparison of Averages of Diets listed in Tables III., IV. and V. (inset opposite).

Table Number.	Calories.	Protein. gm.	Animal Protein. gm.	Fat. gm.	Carbo- hydrate. gm.	Calcium. gm.	Phos- phorus. gm.	Iron. mg.	Man- value per Family.	Rent per week. s. d.	Food Expendi- ture per Man Value per Week. pence.
III., <i>i.e.</i> , Below the range ..	2,613	70.0	27.2	78.3	408	0.48	1.02	13.2	4.25	4 6	27.8
IV., <i>i.e.</i> , Within the Range	2,983	82.1	38.9	103.9	430	0.67	1.25	16.9	2.91	9 5	71.6
V., <i>i.e.</i> , Above the range ..	3,934	113.9	55.8	129.4	579	0.97	1.80	19.8	2.48	8 1	102.6
Increase of IV. over III. per cent.	14	17	43	33	5	40	22	28	- 46	109	157
Increase of V. over III. per cent.	50	63	105	65	42	102	71	50	- 71	80	269

TABLE III.

Diets falling below the Range in either Energy, Protein, Animal Protein or Calcium (see Table II.) :
Average Intake of Nutrients per Man-value Daily and Food Expenditure per Man-value Weekly in Groupings according to Level of Calories and Man-value.

	No. of Families	Calories No.	Protein Gms.	Animal Protein Gms.	Fat Gms.	Carbo- hydrate Gms.	Calcium Gms.	Phos- phorus Gms.	Iron Mgms.	Man- value per Family.	Rent per Family per week	Food Ex- penditure per Man- value per week. Pence.
a. Calories.												
Under 2,000	2	1,847	54.53	22.23	58.71	275	0.356	0.805	9.90	4.58	s. d. 3 3	29.6d.
2,000—2,499	15	2,301	64.48	27.87	68.36	357	0.442	0.937	12.20	4.35	4 3	28.5d.
2,500—2,999	18	2,689	71.29	28.03	81.06	420	0.508	1.042	13.30	4.49	4 10	25.7d.
3,000—3,499	4	3,224	80.76	25.04	99.34	502	0.456	1.079	15.20	3.04	4 1	33.3d.
3,500 and over..	2	3,804	93.06	23.55	105.27	621	0.666	1.603	18.40	3.45	5 2	29.6d.
b. Man-value												
2.0—2.9	7	2,767	78.24	27.94	83.76	428	0.599	1.179	13.80	2.49	4 3	42.2d.
3.0—3.9	12	2,722	72.18	28.21	81.91	424	0.467	1.051	13.70	3.54	4 10	30.9d.
4.0—4.9	11	2,576	68.59	27.41	73.28	411	0.502	1.025	13.50	4.30	4 9	23.3d.
5.0—5.9	6	2,487	64.48	24.68	76.76	385	0.398	0.930	12.30	5.64	4 2	19.4d.
6.0—6.9	3	2,275	61.19	26.73	77.11	334	0.369	0.818	10.60	6.26	3 7	19.8d.
7.0—7.9	2	2,497	65.01	25.21	71.39	399	0.412	0.879	12.00	7.30	4 3	22.0d.

TABLE IV.

Diets falling within the Range in either Energy, Protein, Animal Protein or Calcium (see Table II.) :
Average Intake of Nutrients per Man-value Daily and Food Expenditure per Man-value Weekly in Groupings according to Level of Calories and Man-value.

	No. of Families	Calories No.	Protein Gms.	Animal Protein Gms.	Fat Gms.	Carbo- hydrate Gms.	Calcium Gms.	Phos- phorus Gms.	Iron Mgms.	Man- value per Family.	Rent per Family per week	Food Ex- penditure per Man- value per week. Pence.
a. Calories.												
2,500—2,999	7	2,822	78.98	36.60	97.00	408	0.651	1.199	16.5	2.99	s. d. 10 3	64.0d.
3,000—3,499	7	3,144	85.27	41.30	110.76	451	0.696	1.298	17.2	2.82	8 6	79.2d.
b. Man-value.												
2—2.9	9	3,058	82.55	40.12	109.06	437	0.689	1.269	17.3	2.67	8 4	74.5d.
3—3.9	5	2,847	81.36	36.85	94.55	418	0.645	1.212	16.0	3.31	11 3	66.2d.

TABLE V.

Diets falling above the Range in either Energy, Protein, Animal Protein or Calcium (see Table II.) :
Average Intake of Nutrients per Man-value Daily and Food Expenditure per Man-value Weekly in Groupings according to Level of Calories and Man-value.

	No. of Families	Calories No.	Protein Gms.	Animal Protein Gms.	Fat Gms.	Carbo- hydrate Gms.	Calcium Gms.	Phos- phorus Gms.	Iron Mgms.	Man- value per Family.	Rent per Family per week	Food Ex- penditure per Man- value per week. Pence.
a. Calories.												
Below 3,500	2	2,980	92.73	61.95	120.07	382	0.906	1.483	16.3	1.98	s. d. 7 10	119.6d.
3,500—3,999	7	3,602	101.78	45.98	111.46	548	0.840	1.599	17.7	2.69	8 11	83.4d.
4,000—4,499	3	4,138	121.41	56.65	145.51	585	1.022	2.046	20.1	2.66	7 9	72.6d.
4,500—4,999	2	4,525	128.26	64.83	144.50	678	1.159	1.931	24.1	2.53	6 7	132.8d.
Above 5,000	2	5,156	151.64	73.83	162.10	773	1.231	2.333	26.2	1.93 *One	*7 3 Rent Free excluded.	167.5d.
b. Man-value.												
1—1.9	2	3,972	126.06	77.37	155.25	517	0.946	1.804	20.6	1.83	7 0	135.9d.
2—2.9	11	4,035	116.39	57.97	136.06	586	1.039	1.865	20.3	2.33	7 6	108.4d.
3—3.9	2	3,554	104.97	41.38	88.40	584	0.821	1.731	18.4	3.18	8 10	55.7d.
4—4.9	1	3,509	79.55	17.91	86.24	603	0.579	1.240	16.3	4.06	8 2	65.8d.

TABLE VII.

Average Amounts of Nutrients purchased per Penny.

	UNEMPLOYED (38 Families).			EMPLOYED (28 Families).		
	Old Houses (24)	New Estate (14)	All Unemployed.	Old Houses (18)	New Estate (10)	All Employed.
Protein (Gms.)	9.49	9.34	9.43	7.64	7.91	7.74
Range	5.99-12.08	4.61-12.74	4.61-12.74	4.45-11.25	5.42-12.89	4.45-12.89
Calcium(Gms.)	.056	.061	.058	.054	.062	.057
Range . . . .	.037-.085	.040-.099	.037-.099	.040-.084	.047-.094	.040-.094
Calories	346.7	353.0	349.0	277.5	293.5	283.2
Range	274.8-467.4	185.2-543.2	185.2-543.2	155.2-451.5	193.8-467.5	155.2-467.5

TABLE VIII.

Numbers and Percentages of Families who consumed the following Categories of Foods.

GROUP.	Total number of Families.	Fresh Fruit.	Fresh Vege- tables.	Fish (includ- ing Fried).	Fresh Meat.	Canned or Cooked Meat and Fish	Canned Vege- tables.	Canned Fruit.
Unemployed								
(Old Houses) ..	25	21	25	19	25	15	6	2
Percentage	—	84	100	76	100	60	24	8
Unemployed								
(New Estate) ..	14	12	14	9	14	6	2	2
Percentage	—	86	100	64	100	43	14	14
Employed								
(Old Houses) ..	17	17	17	13	17	13	6	4
Percentage	—	100	100	76	100	76	35	21
Employed								
(New Estate) ..	10	10	10	7	10	10	5	4
Percentage	—	100	100	70	100	100	50	40
Widows	3	1	2	1	3	3	2	—
Percentage	—	33	67	33	100	100	67	—
TOTAL	69	88%	99%	71%	100%	68%	30%	17%

TABLE IX.
Distribution of Hæmoglobin Values.
 (Percentages stated are on the Dare scale.)

Persons examined.	Number examined.	Mean Hb. %		Number examined.	Mean Hb. %	No. 80% Hb. & over.	Per-centage.	No. 70%—79% Hb.	Per-centage.	No. 65%—69% Hb.	Per-centage.	No. below 65% Hb.	Per-centage.	Percentage below suggested anaemia level, i.e., 70% in males over 12. 65% in females and children under 12.
Males	38	83	Employed ..	18	82	13	72	4	22	1	6	—	—	6
			Unemployed	20	84	16	80	3	15	1	5	—	—	5
Females ..	76	73	Employed ..	39	74	11	28	15	38	9	24	4	10	10
			Unemployed	37	73	13	35	7	19	5	14	12	32	32
Children (under 12 years)	138	73	Employed ..	59	72	13	22	20	34	16	27	10	17	17
			Unemployed	79	74	28	35	22	28	12	15	17	22	22

TABLE X.
Distribution of Hæmoglobin Values according to Iron Intake.

Intake of Iron.		5—10 mg.		10—15 mg.		15—20 mg.		20—25 mg.		25—30 mg.	
GROUP.	Number of Persons.	At and above 70%	Below 70%	At and above 70%	Below 70%	At and above 70%	Below 70%	At and above 70%	Below 70%	At and above 70%	Below 70%
Men	38	1	1	25	0	7	1	3	0	0	0
		At and above 65%	Below 65%	At and above 65%	Below 65%	At and above 65%	Below 65%	At and above 65%	Below 65%	At and above 65%	Below 65%
Women	76	4	0	38	9	13	3	4	3	1	1
Children below 12 years	138	7	3	71	17	21	3	9	4	3	0

TABLE XI.

Distribution of Weights and Heights of Certain Members of the Families Studied.
Weights (lbs.) and Heights (inches).

Sex.		AGE IN YEARS.												Total persons under 20 years.	Adults (i.e. over 20 years).				
		Birth to 5/12.	6/12 to 11/12.	1-2.	2-3.	3-4.	4-5.	5-6.	6-7.	7-8.	8-9.	9-10.	10-11.		11-12.	12-13.	13-14.	14-20.	All.	Unemployed.
Males ..	Mean Weight (lbs and ozs.)	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
		15 12	19 7	22 9	28 6	33 4	35 4	40 12	40 12	44 2	51 4	53 9	55 5	63 3	72 12	80 15	96 13	136 4	130 3 (33 persons)
	Number of Persons	2	7	11	8	5	11	6	5	6	8	7	5	5	3	3	2	61	143 7 (28 persons)
Females	Mean Weight (lbs. and ozs.)	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
		12 7	17 15	22 10	24 13	31 10	37 3	37 14	41 8	43 1	61 0	53 15	63 5	61 8	63 12	83 14	102 0	124 7	123 7 (39 persons)
	Number of Persons	1	4	8	4	8	11	12	9	6	1	8	6	2	5	2	1	67	125 13 (28 persons)
Males ..	Mean Height in inches ..	26.5	27.14	30.93	33.36	36.88	38.31	41.61	42.93	44.04	47.89	48.48	51.38	51.33	55.71	57.00	60.25	66.52	66.50 (33 persons)
		2	7	11	8	5	11	6	5	6	8	7	5	5	3	3	2	61	66.54 (28 persons)
	Number of Persons	2	7	11	8	5	11	6	5	6	8	7	5	5	3	3	2	61	66.54 (28 persons)
Females	Mean Height in inches ..	25.13	25.88	31.10	32.50	36.50	38.35	40.70	42.84	43.73	50.00	48.51	51.67	50.94	52.83	58.32	60.00	61.06	61.58 (39 persons)
		1	4	8	4	8	11	12	9	6	1	8	6	2	5	2	1	67	60.33 (28 persons)
	Number of Persons	1	4	8	4	8	11	12	9	6	1	8	6	2	5	2	1	67	60.33 (28 persons)

CHILDREN.	TOTALS.		ADULTS.		TOTALS.	
Males	94	Males ...	...	...	61
Females	88	Females ...	...	...	67

Appendix.

Principal Foods consumed ; Numbers of Families
and Average Amounts per Man-value Weekly
(Widows' Families excluded).

APPENDIX.

Principal Foods consumed : Numbers of Families and Average Amounts per Man-value Weekly
(Widows' Families excluded).

	UNEMPLOYED (38).				EMPLOYED (28).			
	Old Houses (24).		New Estate (14).		Old Houses (18).		New Estate (10).	
	No. of Families	%	Average amount per man-value per week.	No. of Families	%	Average amount per man-value per week.	No. of Families	Average amount per man-value per week.
CEREALS.	12	50	lbs. ozs.	9	64	lbs. ozs.	7	lbs. ozs.
	4	17	- 2.85	4	29	- 3.57	6	- 3.22
	23	96	- 2.54	14	100	- 5.33	10	- 5.51
	10	42	4 12.88	5	36	4 9.79	3	4 3.62
	8	33	2 4.70	6	43	- 6.89	4	1 2.44
	20	83	- 8.46	11	79	- 1.11	9	- 2.99
	7	29	- 2.74	2	14	- 2.73	3	- 2.60
			- 1.68			- 3.61		- 0.83
SUGAR AND JAMS.	17	71	lbs. ozs.	5	36	lbs. ozs.	7	lbs. ozs.
	24	100	- 4.14	14	100	- 3.83	10	- 4.51
	4	17	- 15.38	1	7	- 15.24	1	1 4.96
			- 1.95			- 4.74		- 2.88

	UNEMPLOYED (38).						EMPLOYED (28).			
	Old Houses (24).			New Estate (14).			Old Houses (18).		New Estate (10).	
	No. of Families	%	Average amount per man-value per week.	No. of Families	%	Average amount per man-value per week.	No. of Families	%	No. of Families	Average amount per man-value per week.
FATS AND DAIRY PRODUCTS.			lbs. ozs.			lbs. ozs.				lbs. ozs.
Butter	18	75	- 5.38	11	79	- 4.90	17	94	10	- 6.75
Margarine	19	79	- 7.47	11	79	- 5.65	13	72	8	- 5.16
Cream	—	—	—	1	7	- 1.39	2	11	1	- 1.28
Cheese	20	83	- 1.87	10	71	- 1.62	15	83	8	- 2.61
Eggs	23	96	- 4.24	12	86	- 5.25	18	100	10	- 4.22
Milk, fresh	16	67	.90 pt.	9	64	1.81 pts.	18	100	10	1.33 pts.
Milk, skimmed	1	4	.24 pt.	1	7	1.00 pt.	—	—	1	—
Milk, condensed			lbs. ozs.			lbs. ozs.				lbs. ozs.
*Sk. Sw.	22	92	- 6.36	11	79	- 4.54	12	67	9	- 4.92
Milk, condensed										
*F.C.Sw.	1	4	- 7.86	1	7	- 5.06	3	17	2	- 5.41
Milk, Ev.F.C.										
*Unsw.	1	4	- 5.00	2	14	- 3.72	3	17	3	- 9.85
Dried Milk, Proprietary Brand ..	15	62	- 6.47	5	36	- 3.90	1	6	1	- 2.86
Other Dried Milks..	—	—	—	—	—	—	4	22	1	- 4.75

* Sk. Sw. = Skimmed, sweetened.

F.C. Sw. = Full cream, sweetened.

Ev. F.C. Unsw. = Evaporated, full cream, unsweetened.

	UNEMPLOYED (38).				EMPLOYED (28).			
	Old Houses (24).		New Estate (14).		Old Houses (18).		New Estate (10).	
	No. of Families	%	Average amount per man-value per week.	No. of Families	%	Average amount per man-value per week.	No. of Families	Average amount per man-value per week.
FRUIT AND VEGETABLES.								
Apples	18	75	lbs. ozs. 5.58	9	64	lbs. ozs. 8.23	14	lbs. ozs. 7.45
Bananas	11	46	— 3.08	6	43	— 3.00	9	— 4.17
Beetroot	8	33	— 2.84	2	14	— 5.92	5	— 4.75
Cabbage	9	37	— 12.16	8	57	— 8.17	8	— 7.60
Carrots	14	58	— 3.45	9	64	— 3.04	13	— 3.30
Cauliflower	3	12	— 4.34	2	14	— 7.82	8	— 5.94
Leeks	8	33	— 2.55	7	50	— 5.60	3	— 1.33
Lettuce	3	12	— 2.04	4	29	— 3.10	2	— 3.07
Onions	24	100	— 4.80	13	93	— 6.72	17	— 5.81
Peas (Dried)	13	54	— 3.76	5	36	— 2.40	6	— 2.64
Potatoes	24	100	2 12.69	14	100	2 7.01	18	2 11.23
Tomatoes, fresh	19	79	— 7.30	8	57	— 5.62	16	— 6.43
Turnips	11	46	— 5.85	5	36	— 7.73	7	— 6.98
FISH.								
Cod	2	8	lbs. ozs. 1.20	—	—	lbs. ozs. —	4	lbs. ozs. 10.92
Haddock	4	17	— 5.01	1	7	— 3.07	4	— 4.68
Herring, fresh	5	21	— 10.24	3	21	— 3.75	1	— 11.33
Kippers	8	33	— 3.78	4	29	— 3.05	4	— 1.72
Sole	—	—	—	1	7	— 1.11	—	—

	UNEMPLOYED (38).				EMPLOYED (28).			
	Old Houses (24).		New Estate (14).		Old Houses (18).		New Estate (10).	
	No. of Families	%	Average amount per man-value per week.	No. of Families	%	Average amount per man-value per week.	No. of Families	%
CANNED AND PREPARED FOODS.			lbs. ozs.			lbs. ozs.		
Baked Beans	4	17	— 2.91	2	14	— 5.01	4	40
Corned Beef	7	29	— 2.21	2	14	— 2.37	6	60
Fried Fish	7	29	— 6.76	4	29	— 5.73	6	60
Fried Chips	15	62	— 10.46	4	29	— 7.61	6	60
Boiled Ham	2	8	— 2.44	3	21	— 1.19	5	50
Ice Cream	—	—	—	1	7	— 1.67	2	20
Meat Pies	3	12	— 3.13	4	29	— 13.18	4	40
Pineapple, tinned ..	2	8	— 10.07	1	7	— 4.93	3	30
Peaches, tinned	—	—	—	1	7	— 4.46	2	20
Peas, tinned	1	4	— 8.00	—	—	—	1	10
Salmon, tinned	3	12	— 5.12	—	—	— 5.02	2	20
Sweets.....	5	21	— 1.50	3	21	— 1.46	5	50
Tomatoes, tinned ..	2	8	— 5.06	—	—	— 6.83	1	10
Tongue, boiled	—	—	—	1	7	— 1.67	1	10
Pears, tinned	—	—	—	—	—	— 3.93	—	—
Fruit Salad	—	—	—	—	—	— 3.20	—	—

Appendix B.

CITY AND COUNTY OF NEWCASTLE UPON TYNE.

DOMICILIARY MEDICAL SERVICES.

JOINT MEDICAL RELIEF DISTRICT.

REPORT OF THE MEDICAL OFFICER OF HEALTH ON THE WORKING OF THE DOMICILIARY MEDICAL SERVICES IN THE JOINT MEDICAL RELIEF DISTRICT DURING THE PERIOD 1ST MARCH, 1935—29TH FEBRUARY, 1936.

1. **Introductory.** A previous report on this subject was presented to the City Council on the 20th March, 1935. It recorded the establishment of the "open choice" method of providing domiciliary medical services in the City, and described the working of the scheme during the initial period of approximately ten months, *i.e.*, from November 8th, 1933, to August 31st, 1934.

Certain features of the scheme may be briefly summarised as follows :—

- (a) It applied to six of the ten medical relief districts of the City, which were designated the Joint Medical Relief District.
- (b) Drugs and dressings were provided from municipal dispensaries and not at the cost of the medical officers.
- (c) The medical practitioners on the panel, by which the scheme was operated, agreed that during the trial period of twelve months their remuneration, apart from certain special fees, should be derived from a pool of £1,200. This pool when divided amongst the participating practitioners in proportion to the total number of services rendered to their patients, yielded an amount of 5.656 pence per unit service.

2. **Remuneration of Panel Practitioners.** In order to put this obviously inadequate rate of remuneration upon a more equitable basis, discussions took place between representatives of the Health Committee and of the panel practitioners, with the result that a further report, embodying terms which had been agreed by both parties was submitted to the City Council and approved by that body on April 3rd, 1935.

The newly agreed terms provided :—

- (a) That while no further payment could be made to the practitioners in respect of the first year period (November 8th, 1933—November 7th, 1934) during which it had been agreed to operate the scheme on the “ pool ” basis, a sum of £875 would be added to the amount normally payable on the pool scale for the period November 8th, 1934—February 28th, 1935.
- (b) That as from March 1st, 1935, payments to practitioners would be at the rate of 5/- per quarter per patient treated, but that where a patient had received treatment during two consecutive periods of three months, and was still found to require further medical attention at the end of the second quarter, a payment of £1 should be made to cover treatment for a period of twelve months.
- (c) That the special fees payable in respect of certificates required by Relieving Officers, confinements and fractures, etc., should be continued. The fee for a certificate had previously been fixed at 1/-. Confinements, fractures, etc., were paid for on the recognised scale.
- (d) That the new financial arrangements should be embodied in the official contract of service, and that the whole position should be reviewed as soon as possible after February 29th, 1936.

Owing to the retirement of one of the four remaining salaried District Medical Officers in September, 1934, an additional Medical Relief District was included in the Joint Medical Relief District from that date.

The present report, therefore, deals with the operation of the scheme under the new conditions of service in seven of the ten original medical relief districts during the period of twelve months from March 1st, 1935, to February 29th, 1936.

3. Administrative Procedure. The administrative procedure under the new arrangements, and the method of assessing the payments due to members of the panel will now be described in general terms.

A patient requiring treatment presents to the panel practitioner of his choice the relieving officer's order, together with a medical record card which is valid for a period of three months from the date of issue. At the end of that period the record card is forwarded

to the Health Department, and if the treatment of the patient has been completed, the practitioner is credited with a fee of 5/-. If, in the opinion of the doctor, treatment is still necessary, a note to that effect is made on the record card, and the Public Assistance Officer is instructed by the Health Department to issue a renewal of treatment card, valid for a further period of three months.

All cards returned to the Health Department are carefully scrutinised by a medical member of the staff, and in certain cases where it is found that a recommendation for further treatment has been made in error, the issue of an additional record card is not authorised. Where the necessity for the continuance of treatment would appear to be open to question, the case is reviewed by the Medical Referee (*i.e.*, Dr. G. P. Harlan, Medical Superintendent of the Newcastle General Hospital) in the presence of the panel practitioner, if the latter so desires. In actual practice recommendations of the panel practitioners as to continuance of the treatment are usually confirmed by the Medical Referee.

The amounts payable to members of the panel are based primarily on the number of three-monthly record cards which they send to the Health Department, each card being valued at 5/-. Practitioners are also credited with one shilling in respect of every medical certificate issued by them at the request of a Relieving Officer, with the fees payable for confinements and other special services, and with the actual cost of emergency drugs dispensed by them to patients.

The initial financial settlement was in respect of the half-year ended 31st August, 1935, but subsequent payments have been made quarterly.

4. Number of persons in receipt of Public Assistance.

The average number of persons in the City who were in receipt of Public Assistance during the twelve-month period March 2nd, 1935—February 29th, 1936, is stated in Table I., where the corresponding numbers for the ten-month period reviewed in the previous report are also given.

TABLE I.

PERIOD.	Average number of Persons receiving Public Assistance.			
	Men.	Women.	Children.	Total.
30th Oct., 1933 } 25th Aug., 1934 }	6,274	6,611	8,510	21,395
2nd March, 1935 } 29th Feb., 1936 }	6,379	6,758	7,549	20,687

(It will be appreciated that these numbers indicate the **average** number of persons receiving public assistance in each of the quoted periods. The **total** number of individuals who received public assistance at one or another time during the period is obviously greater.)

The 20,687 persons who on an average were in receipt of relief between March 2nd, 1935, and February 29th, 1936, were not evenly distributed throughout the medical relief districts of the City. Two of the three districts excluded from the scheme and still worked by part-time salaried officers had an unduly high proportion of their population on relief. In the remaining districts the proportion of persons on relief was probably about the average for the City.

Taking these facts into consideration it is estimated that the average number of persons in receipt of relief in the area comprised by the seven amalgamated medical relief districts—the Joint Medical Relief District—was approximately 13,500 during the period under consideration.

5. Record of patients treated, etc. Between March 1st, 1935, and February 29th, 1936, in the area of the Joint Medical Relief District, 8,193 persons were attended by medical practitioners under the Domiciliary Medical Scheme.

Of these 611 were "long period" cases receiving treatment for three consecutive quarters or for the whole year. From the medical standpoint these could be regarded as "chronic" patients. The remaining 7,582 were "short period" cases where treatment was required for periods of varying duration, but never throughout three consecutive quarters. Medically speaking the great majority of these cases were acute conditions of short duration, but a number were patients suffering from sub-chronic or recurrent disorders.

More complete details of the groups and sub-groups to which the various types of case were allocated are given in the following tabular statement (Table II.) which also includes information as to the number of medical record cards issued for each type of case, and the cost to the local authority.

TABLE II.

Designation and Sub-group of case.	Medical Grouping (approximate).	Duration of Treatment.	Number of three monthly Record Cards issued.	Cost of Patient to Local Authority.
<i>Long Period ...</i>	Chronic	More than six months consecutively.	3 or 4	£1
<i>Short Period—</i> Sub-group A.	Acute	One period not exceeding three months.	1	5/-
„ „ B.	Acute	Two separate periods, each not exceeding three months.	2	10/-
„ „ C.	Acute	Three separate periods, each not exceeding three months.	3	15/-
„ „ D.	Sub-Chronic	Two consecutive periods of three months, not exceeding six months.	2	10/-
„ „ E.	Sub-Chronic	One period not exceeding three months, followed or preceded by a separate period not exceeding six months.	3	15/-

In Table III. the 8,193 patients treated in the Joint Medical Relief District are distributed amongst the several groups and sub-groups already referred to. The average number of medical services rendered to each patient is also recorded, together with the average remuneration received by the medical practitioner per unit service.

TABLE III.

Designation and Sub-group of case.	Number Treated.	Total No. of services rendered.	Cost to Local Authority.			Average No. of Unit services per patient.	Average remuneration per unit service.	
<i>Long Period ..</i>	611	16,145	£	s.	d.	26.4	9.08d.	
			611	0	0			
<i>Short Period-Sub-group A.</i>	5,907	26,568	£	s.	d.	4.5	s.	d.
			1,476	15	0		1	1.34
„ „ B.	835	7,761	417	10	0	9.3	1	0.91
„ „ C.	82	1,120	61	10	0	13.7	1	1.18
„ „ D.	573	8,148	286	10	0	14.2	—	8.44
„ „ E.	185	3,371	138	15	0	18.2	—	9.88
Total of <i>Short Period Cases</i>	7,582	46,968	2,381	0	0	6.2	s.	d.
							1	0.17
Total of All Cases. Long and Short Periods	8,193	63,113	2,992	0	0	7.7	— 11.38d.	

For a complete understanding of these data one further item of information is required, namely, the actual character of the services rendered to the various types of patient. This is set out for “ Long Period ” and “ Short Period ” cases in Table IV.

TABLE IV.

Designation.	No. of Patients.	Attendances at Doctor's surgery.	Visits at patient's home.	Total Units of Medical Service.
Long Period Cases.	611	11,126	5,019	16,145
Average per Patient.	—	18.2	8.2	26.4
Short Period Cases.	7,582	29,025	17,943	46,968
Average per Patient.	—	3.8	2.4	6.2

Ratio of Attendances to Visits—Long Period Cases, 2.2 to 1.
Short Period Cases, 1.6 to 1.
All Cases, 1.7 to 1.

6. Analysis of services rendered by Panel Practitioners.

A number of deductions can doubtless be made from these statistical data. For the present it is sufficient to submit :—

- (a) That the remuneration per unit service, which amounted to 11.38d. per unit is twice the previous rate of 5.656d.
- (b) That the rate for all “ Short Period ” cases (1s. 0.17d.) is 25% higher than the rate for “ Long Period ” cases (9.08d.)
- (c) That the highest rate of remuneration (1s. 1.34d.) is obtained from the true “ Short Period ” case where treatment is given for a period not exceeding three months (Sub-Group A.)
- (d) That the services rendered to both Long and Short Period cases appear to be reasonable in number. The typical “ Short Period ” case in which treatment is complete within three months (and frequently in a much shorter period) has 4.5 visits or attendances. The typical chronic case received 26.4 services during the nine months or year during which it was under medical attention. This can be regarded as equivalent to a fortnightly visit or attendance.
- (e) That the ratio of attendances to visits is a valuable index of the services rendered by the doctors, for it can be assumed as a general rule that a patient attending the surgery takes up less of the practitioner’s time than does a visit to the patient’s home.

During the first review period (8th November, 1933, to 31st August, 1934) the total numbers of attendances and visits were 18,338 and 23,318 respectively, yielding an attendance to visit ratio of 0.8 to 1., in other words, domiciliary visiting played a more important part in the scheme than the surgery consultation.

The present review period shows a reversal of this state of affairs. The total numbers of attendances and visits were 39,333 and 22,962 respectively, the attendance to visit ratio being 1.7 to 1.

For “ Long Period ” patients the ratio was 2.1 attendances to 1 visit, as contrasted with 1.6 attendances to 1 visit for the “ Short Period ” patients. This difference between the two types of case is understandable as many of the long period patients are suffering from chronic conditions which do not prevent them from getting about.

Individual doctors vary in their methods of practice—some appear to do the greater part of their work in the surgery, others visit their patients with commendable

frequency. The tendency to replace domiciliary visiting by the easier process of surgery consultation cannot be regarded favourably, and its further extension will be to the detriment of the service as a whole.

7. **Expenditure.**—Expenditure upon the Domiciliary Medical Services falls under three heads—Medical Practitioner Services, Dispensary Services and Administrative Charges.

Details of these for the twelve months ending February 29th, 1936, will be given in the following paragraphs, together with any additional information which may appear relevant.

Medical Practitioners' Services.

(a) *Remuneration of Medical Practitioners upon the panel of the Joint Medical Relief District.* The method of calculating this is described in paragraph 2 (b) above. The cost for the twelve months under consideration was £2,992.0.0, equivalent to 7s. 3½d. per patient treated.

(b) *Fees for Certificates.* 5,634 certificates were completed by Medical Practitioners at the request of Relieving Officers. The cost of these at 1/- per certificate amounted to £281.14.0.

It will be noted that this expenditure is equal to 9.4% of the ordinary remuneration of the Panel Practitioners. If this £281.14.0 is spread over the 63,113 unit medical services rendered to patients it is equivalent to an additional 1.07d. per unit service. Added to the average fee per unit service it increases this from 11.38d. to 1s. 0.45d.

(c) *Confinement and other Special Fees.* Under this heading £50.11.6 was disbursed during the year. This amount represents payment for 36 confinements.

Owing to the miserable housing conditions of many of the families in receipt of public assistance, the majority of confinements take place at the Princess Mary Maternity Hospital and the Newcastle General Hospital.

No payments in respect of special fees, *e.g.*, fractures, etc., were made during the period under review.

(d) *Emergency Medicines.* Claims for the cost of emergency medicines were received to a total of £4.16.0.

The total expenditure under heads (b), (c) and (d) was £337.1.6, equivalent to 10d. per patient treated.

Summary of Expenditure on Medical Practitioners' Services :—

Remuneration of Medical Practitioners on	£	s.	d.
the Panel	2,992	0	0
Fees for Certificates	281	14	0
Fees for Confinements	50	11	6
Emergency Medicines	4	16	0
	<hr/>		
	£3,329	1	6
	<hr/>		

The average expenditure under these various sub-heads amounted to 8s. 1½d. per patient treated.

Dispensary Services. No alteration has been made in the method of providing dispensary services as described in the previous report. There has been, however, a very definite increase in the number of prescriptions dispensed from the two dispensaries. Between November 8th, 1933, and August 31st, 1934, the total number of prescriptions dealt with was 30,219. For the twelve-month period now under review, 61,357 prescriptions were dispensed. Even when allowances have been made for the extended duration of the second review period and the larger number of patients treated, there is an actual increase in the number of prescriptions dispensed of at least 40%. No satisfactory explanation of this increase can be offered, but it is obviously a matter which will require close supervision.

As a result of this increased work the staffs at both dispensaries have been augmented and this is reflected in the salary costs for the Municipal Dispensary at the Newcastle Dispensary, as set out in the summary statement on page 10.

At the Newcastle General Hospital no definite amount is appropriated for dispensers' salaries. The sum transferred from the Hospital account to the Domiciliary Medical Service account includes both the cost of materials and an allowance for the services of the Dispensary and its staff.

Summary of Dispensary Services Costs :—

(a) *Municipal Dispensary, Newcastle Dispensary, New Bridge Street.*

	£	s.	d.
Rent, Cleaning, Light, Water, etc. ...	200	0	0
Dispensers' Salaries	296	0	0
Special Saturday afternoon duty ...	26	0	0
Drugs, Dressings, etc.	364	0	0
	<hr/>		
	£886	0	0
	<hr/>		

Prescriptions dispensed, 33,872. Average cost per prescription, 6.3d.

(b) *Newcastle General Hospital.*

	£	s.	d.
Transfer from Hospital Account for			
Drugs and Dispensary Services ...	562	0	0
Special Saturday afternoon duty ...	26	0	0
	<hr/>		
	£588	0	0
	<hr/>		

Prescriptions dispensed, 27,485. Average cost per prescription, 5.1d.

(c) *General.*

Total cost of Dispensary Services = £1,474.

Total number of prescriptions dispensed, 61,357.

Average cost per prescription, 5.7d.

Average cost per patient treated = 3s. 7d.

This average cost per prescription dispensed 5.7d. contrasts very favourably with the average cost per prescription under the National Health Insurance Scheme, which is 7.8d.,* more especially when it is remembered that the National Formulary is used in both schemes. The fact that only two dispensaries are available under the Domiciliary Medical Scheme has not been proved to be a serious inconvenience either to patients or their relatives, but with any additional extension of the scheme some decentralisation of the dispensary arrangements would appear advisable.

Administrative Charges.

(a) *Clerical Services.* At the time when the Domiciliary Medical Services were provided by part-time salaried officers the clerical supervision of their work took up

* This figure has been kindly supplied by the Clerk to the Newcastle upon Tyne Insurance Committee.

approximately one-seventh, *i.e.*, 5 hours weekly, of the time of one intermediate grade clerk (salary £210) at a cost of £30. Following the adoption of the "open choice" method operated on the basis of a financial "pool," with from 45 to 50 doctors participating it was found necessary to employ an additional full-time clerk (salary £182) and to allocate two-fifths, *i.e.*, 14 hours weekly, of the time of the intermediate grade clerk to this purpose. The replacement of the "pool" by the new system of remuneration has not resulted in any saving in clerical services. The expenditure on these services chargeable against the Joint Medical Relief District remains at approximately £250 per annum. As the cost of the Domiciliary Medical Services was £5,129 in the twelve months under review the clerical services represent 5% of that total. It has been suggested that this is an excessive proportion, but it is doubtful whether such a contention can be maintained when the clerical administrative costs of certain other sections of the Health Services are considered. Apart from any question of comparative cost the clerical section of the Domiciliary Medical Services is valuable in itself. It is, in fact, a key point of the scheme for through it is maintained a close liaison between the panel practitioner on the one hand and the municipal hospitals, the statutory health services, the domiciliary nursing services and the public assistance department on the other. The liaison work is in addition to its primary statistical and financial functions.

It is possible that by certain modifications in the present method of assessing the remuneration of the medical practitioners, notably by the substitution of an **annual** payment and medical record card for the present **quarterly** payment and card, a reduction could be effected in the work of the clerical section. By such a procedure the number of record cards handled could be reduced by 30%. But it should be remembered that practically 75% of patients are under treatment for a maximum period of three months, and a twelve-month record card issued at the beginning of the incapacity of such a patient would be in use for three months and dormant for nine months. Incidentally, during the dormant period the patient might cease to be a person in receipt of Public Assistance.

The present arrangement whereby record cards are returned quarterly undoubtedly assists the central office in exercising a continuous supervision of the scheme. For “ Long Period ” or “ Chronic ” cases the twelve-month record card would have certain advantages.

(b) *Printing, Postages.* Apart from clerical salaries the only item chargeable as administrative expenditure is printing and postages, totalling £76.

Summary of Administrative Charges.

Salaries (additional)	...	...	...	...	£250
Printing, Postages	...	...	...	...	76
					<hr/>
					£326
					<hr/>

Average cost per patient treated=9.5d.

Table V. states the total expenditure on the Domiciliary Medical Services during the period 1st March, 1935—29th February, 1936.

TABLE V.

ITEM.	ACTUAL COST YEAR ENDED 31/3/36.	AVERAGE COST PER PATIENT TREATED.
Salaries	£ 2,992	s. d. 7 3.5
Special Fees (Certificates, Confinements, Emergency Medicines, etc.)	337	— 10
Dispensing Services	1,474	3 7
Administrative Charges :		
Printing, Postages	76	} — 9.5
Additional Clerical Assistance £182	250	
Proportion of Intermediate Grade Clerk's Salary £68		
TOTAL....	<u>£5,129</u>	<u>12 6</u>

8. Number of Practitioners on the Panel of the Joint Medical Relief District. The number of medical practitioners on the panel was 56 on March 1st, 1935, and had increased to 61 by February 29th, 1936. Practically 60% of the National Health Insurance practitioners in the area of the Joint Medical Relief District serve on the Domiciliary Medical Services panel.

9. Medical Records. The medical record cards are kept with a degree of accuracy and completeness not inferior to the standard of record-keeping under the National Health Insurance Scheme. Some administrative inconvenience is caused occasionally by doctors failing to return expired record cards to the Health Department promptly.

10. Complaints against Practitioners. No complaints were preferred by patients against practitioners on the panel during the period under review. The right to change their doctor is rarely exercised by patients on the grounds of dissatisfaction with the services provided.

These two facts only serve to confirm what has been the invariable experience of all who have been concerned with the working of the "open choice" method. No other scheme of domiciliary medical service has ever achieved so large a measure of acceptance and popularity amongst those members of the community whom it is intended to serve.

11. Relations with Relieving Officers. The relations between Medical Practitioners and Relieving Officers have continued excellent throughout the year. There is now a very complete and mutual understanding of their respective rôles in the scheme.

12. Certification of Fitness. Here again, experience has given the panel practitioners an increased knowledge of his duties in this matter. Complaints as to laxity in certifying fitness have been relatively few, and it is the considered opinion of the Public Assistance Department that the members of the "open choice" panel discharge this duty even more conscientiously than did their predecessors, the salaried part-time district medical officers. In the few doubtful cases the services of the Medical Referee (Medical Superintendent of the Newcastle General Hospital) are called upon.

13. Recommendations for Medical Extras. The view expressed in the previous report that the dangers of excessive recommendations for medical extras had been exaggerated has been substantiated during the past year.

Table VI. states the expenditure on medical extras, and the average cost per relieving officers' order for the three periods:—

- a. 1st November, 1932, to 31st August, 1933 (10 months period operated by part-time salaried district medical officers).

- b. 1st November, 1933, to 31st August, 1934 (10 months period operated by panel of practitioners serving on the panel of the Joint Medical Relief District).
- c. 1st March, 1935, to 29th February, 1936 (12 months period under review).

TABLE VI.

Period.	Relieving Officers' Orders.	Milk and Eggs.	Other extras—Cod Liver Oil, etc.	Total Cost.	Cost per Relieving Officers' Order.	
a. { 1st Nov., 1932 } { 31st Aug., 1933 }	5,096	£ 297	£ 42	£ 339	s. 1	d. 3.9
b. { 1st Nov., 1933 } { 31st Aug., 1934 }	8,836	513	56	569	1	3.4
c. { 1st Mar., 1935 } { 29th Feb., 1936 }	13,396	657	72	729	1	1.1

14. **Association with the Newcastle General Hospital.** There has been a marked increase in the work of the Newcastle General Hospital since 1930 (Table VII.). To this the success of the Domiciliary Medical Services has certainly contributed but the main cause is the steady progress which the hospital has made in the regard of the inhabitants of the City. There is no evidence that panel practitioners refer cases to hospital unnecessarily.

The hospital provides a general consultative service for out-patients and has established two important clinics for diabetic and anæmia cases. These latter are particularly useful in the case of Public Assistance patients. For example, diabetic patients attend the hospital for blood sugar examinations and the regulation of their insulin dosage. The necessary information on these points is communicated to the panel practitioners together with any suggestions as to special dietetic requirements, which can be recommended for issue as medical extras.

TABLE VII.

Year.	Admissions.	Operations.	Maternity Cases.
1930	3,048	596	97
1931	3,598	1,125	99
1932	4,522	1,428	161
1933	4,776	1,560	194
1934	5,544	2,076	225
1935	6,245	2,722	273

15. Relations with Statutory Health Services. The association of the Domiciliary Medical Services with the other organised health services of the Local Authority, particularly the Maternity and Child Welfare and Tuberculosis services is being steadily developed.

16. Relations with District Nursing Associations. During the course of the past year an agreement was reached whereby the local Nursing Associations provide domiciliary nursing services for any public assistance patient on request by the medical practitioner. This agreement applies to all the Nursing Associations except one which is organised on lines somewhat different from those of the ordinary district association.

The importance of this arrangement cannot be overstated, and the co-operation of the associations has been very welcome.

17. Incidence of Sickness, etc. It has frequently been observed that while the statistics of birth and mortality are now adequately recorded by the Registrar General, there is little information regarding the incidence of sickness apart from notifiable infectious disease.

Details concerning one section of the population are now forthcoming from the records of the National Health Insurance Scheme but these obviously relate to insured persons over the age of 16. The Domiciliary Medical Scheme provides an opportunity for studying sickness and invalidity amongst one large section of the population including males and females of all ages.

The importance of such data is only now beginning to be understood. With proper statistical methods it should be possible to correlate the effect of bad housing conditions, low income levels, etc., upon the health of the public assistance community. The epidemiology of many of the minor infectious diseases could also be studied as well as the incidence of those common causes of incapacity—tonsillitis, rheumatism and gastritis.

Certain elementary facts have already been extracted. Table VIII. (page 16) shows the age and sex distribution of the patients treated under the scheme. There are a number of interesting features in this table, but the only one to which attention is particularly directed is the fact that 41.4 per cent of the clientele of the scheme are children under the age of 15 years.

Table IX. (page 17) gives the classified distribution of the diseases for which patients were treated. This table is based on a similar table in the Annual Report of the Chief Medical Officer of the Ministry of Health for 1933, which records the incidence of disease amongst insured persons.

TABLE VIII.
AGE AND SEX DISTRIBUTION OF PATIENTS TREATED.
(1ST MARCH, 1935—29TH FEBRUARY, 1936).

AGE PERIODS.	CHRONIC PATIENTS.						ACUTE PATIENTS.						CHRONIC AND ACUTE PATIENTS.					
	Males.			Females.			Males.			Females.			Males.			Females.		
	No.	Percentage of Total.		No.	Percentage of Total.		No.	Percentage of Total.		No.	Percentage of Total.		No.	Percentage of Total.		No.	Percentage of Total.	
		Per-	cen-		Per-	cen-		Per-	cen-		Per-	cen-		Per-	cen-		Per-	cen-
		tage	tage		tage	tage		tage	tage		tage	tage		tage	tage		tage	tage
		Total.	Total.		Total.	Total.		Total.	Total.		Total.	Total.		Total.	Total.		Total.	Total.
0-5	11	5.2	4.0	16	4.4	27	851	28.2	19.5	889	19.5	1,740	862	26.7	905	1,767	18.2	21.6
5-15	9	4.2	3.8	15	3.9	24	745	24.7	18.6	850	18.6	1,595	754	23.3	865	1,619	17.5	19.8
15-25	3	1.4	4.3	17	3.3	20	163	5.4	7.2	327	7.2	490	166	5.1	344	510	6.9	6.2
25-45	71	33.3	21.8	87	25.9	158	693	22.9	28.3	1,290	28.3	1,983	764	23.7	1,377	2,141	27.8	26.1
45-65	99	46.5	34.2	136	38.5	235	447	14.8	16.8	769	16.8	1,216	546	16.9	905	1,451	18.2	17.7
Over 65	20	9.4	31.9	127	24.0	147	120	4.0	9.6	438	9.6	558	140	4.3	565	705	11.4	8.6
TOTAL ..	213	100	100	398	100	611	3,019	100	100	4,563	100	7,582	3,232	100	4,961	8,193	100	100

TABLE IX.

Proportional distribution of disease amongst acute and chronic Public Assistance Patients. The information for insured persons as set out in the Annual Report of the Chief Medical Officer of the Ministry of Health for 1933 is given for comparison.

DISEASE.	Representative Areas, England and Wales. Chief Medical Officer's Report. (Year 1933.)		ACUTE PATIENTS.		CHRONIC PATIENTS.	
	No.	Per 1,000 of Total.	No.	Per 1,000 of Total.	No.	Per 1,000 of Total.
1. Influenza	14,905	118.6	373	34.7	17	13.9
2. Tuberculosis, all forms	905	7.2	100	9.3	24	19.6
3. Organic Heart Disease	1,589	12.6	513	47.7	165	135.0
4. Anæmia	1,578	12.6	495	46.1	61	49.9
5. Bronchitis, tonsillitis, nasal catarrh, cold, etc.	29,698	236.4	2,773	258.2	244	200.0
6. Pneumonia and other diseases of the respiratory system	1,699	13.6	283	26.4	64	52.4
7. Diseases of the digestive system	13,915	110.7	1,098	102.2	131	107.2
8. Diseases of the genito-urinary system	3,854	30.7	394	36.7	55	45.0
9. Diseases of the nervous system and special senses	7,046	56.1	465	43.3	112	91.6
10. Skin Diseases	6,112	48.6	431	40.1	24	19.6
11. Injuries and accidents	10,809	86.0	236	22.1	14	11.5
12. Abscess, boils, and other septic conditions	8,808	70.1	429	39.9	19	15.5
13. Lumbago, rheumatism, etc.	11,329	90.2	566	52.8	94	76.9
14. Debility, neuralgia and headache	6,115	48.7	783	72.9	80	65.4
15. Malignant Disease	221	1.8	39	3.6	17	13.9
16. Other Diseases	7,063	56.1	598	55.7	82	67.1
17. Infectious Diseases	—	—	901	83.9	6	4.9
18. Puerperal state	—	—	262	24.4	13	10.6
TOTAL	125,646	1,000	10,739*	1,000	1,222†	1,000

* This figure represents illnesses suffered by 7,582 acute patients. (See Table VIII.).

[illegible]

A further extension of these statistical investigations should yield interesting and helpful results.

18. Conclusions. The essential features of a model Domiciliary Medical Scheme can be variously stated but the following are probably its main requirements :—

- (a) The Scheme should supply to public assistance patients a complete range of medical, dispensing and ancillary services not inferior to those provided under the National Health Insurance Acts.
- (b) Its administration should be identified as little as possible with the Poor Law, and wherever feasible it should allow free choice of doctor by the patient.
- (c) From the administrative standpoint it should be efficient, convenient, elastic and not unnecessarily expensive.
- (d) It should work in close co-ordination with the statutory health and hospital services of the local authority, and should co-operate effectively with the voluntary organizations which are concerned with the nursing and medical treatment of the sick poor.
- (e) It should offer a reasonable remuneration to those medical practitioners engaged in its service.
- (f) Its medical records should be capable of throwing light upon the problems of sickness and invalidity in the community.

It would be premature to suggest that at the present stage of its development the Newcastle Scheme complies with all these requirements, but it is submitted that during the period covered by this report it has been steadily approximating to the ideal which was present in the minds of its originators.

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